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Multiple Acquisitions, Market Valuations and Managerial Overconfidence: The Wealth Effects of the UK Merger Activity

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By Dimitris Petmezas

Principle Supervisors: Prof. Antonios Antoniou/Dr Huainan Zhao

Submitted for the Degree of Doctor of Philosophy in Finance

October 2005

0 5 MAY 2006

To my Father

Multiple Acquisitions, Market Valuations and Managerial Overconfidence: The Wealth Effects of the UK Merger Activity

By Dimitris Petmezas

Abstract

In this thesis we investigate shareholders' wealth effects of UK acquiring firms engaged in Mergers and Acquisitions and potential factors that affect their performance. More specifically, we analyse bidder gains and losses for acquisitions of firms with different ownership status (i.e. public, private and subsidiaries) and when alternative methods of payment are used in the transaction. We also place emphasis on the performance of firms that conduct a substantial number of acquisitions during a short span of time (i.e. frequent bidders). These firms constitute a large proportion of the entire UK takeover activity and therefore an examination of their share price performance reveals significant and interesting conclusions. We further seek to examine a potential source for the results obtained for bidding firms and we find that market conditions (i.e. stock price valuations) affect stock performance and drive acquisitions. Moreover, when comparing whether the stock market or the merger market is responsible for the return patterns obtained, we conclude that high or low market valuations lead bidders' returns. Finally, we offer a behavioural explanation (i.e. overconfidence) for the differing performance exhibited between casual acquiring firms and bidders carrying out many acquisitions (i.e. frequent acquirers). In particular, we empirically examine whether psychological biases of the acquiring managers play an important role in merger activity. We use the high acquisitiveness of bidders as a direct proxy of overconfidence and compare their stock performance to casual bidders. On the whole, we suggest that overconfidence is strongly related to merger activity and conclude that aggressive acquisitions lead to lower abnormal returns.

The material contained in this Thesis has not been previously submitted for a degree in this or any other University.

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Acknowledgements

Although this thesis is a product of personal work and "pain", I really feel the need to thank some people who significantly contributed to its completion. First of all, I am deeply indebted to my supervisor *Professor Antonios Antoniou* who led me in "his own and unique way", like a real maestro, to an understanding of what Finance is and, most importantly, what is indeed the purpose behind a thesis. *Professor Antoniou* "was there" whenever I asked for his help and advice and, with his suggestions, he shed light on many crucial points that dramatically improved the result of this work. I am also grateful to my second supervisor *Dr Huainan Zhao* who inspired me to start this thesis. Through his comments and suggestions in each of the research meetings we had over these years, he guided me to follow the right research path. There is no doubt that these two people are my mentors who shaped, in addition to my understanding of Finance, the way that I should face real life.

I would also like to make a special mention of *Professor John Doukas* who inspired and motivated me to improve dramatically the quality of this work, *Professor Krishna Paudyal* and all the faculty of the Department of Economics, Finance and Business at the University of Durham for their strong support and very useful and fruitful advice.

Lastly, I need to say a special 'thank you' to my family. Namely, *my father Stavros*, *my mother Rania*, *my sister Fotini*, *my grandmother Maria* and *my brother-in-law Sakis* who all supported me in different ways and encouraged me to cross this difficult path of my life. I will never forget what you have all offered me and I will always be grateful!

Dimitris Petmezas

October 2005

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Chapter 1: Introduction

The central purpose of this thesis is to examine acquiring firms' stock performance and potential factors that affect shareholders' wealth. Existing literature has identified several determinants that drive bidders' performance and some of the most pronounced ones are related with the method of payment used in the transaction, the target ownership status or market valuations during an acquisition announcement.

A small body of literature has recently emerged that examines the performance of acquiring firms engaging in many acquisitions. The use of a multiple acquirers' sample to examine major return determinants is novel as it allows looking into the wealth effects of merger characteristics within a largely homogeneous group of acquirers. Within this context, the performance of acquirers buying unlisted firms that behave differently to public acquisitions has been barely examined, especially in the UK. Further, there is a growing body in the literature suggesting that market valuations determine bidder's performance, while no evidence is provided for UK acquisitions on this matter. Very recently, some studies have tried to link managerial "overconfidence" with corporate acquisitions. However, there is not much information on what is the effect on shareholders' wealth of acquisitions initiated by overconfident bidders, and, most importantly, on the way managerial overconfidence could be measured. We attempt to fill these gaps in Chapters 2, 3 and 4.

In Chapter 2 we examine shareholders' wealth effects of bidders initiating many acquisitions during a three-year period. In general, the largest body of the literature regarding short-run abnormal returns suggests that target firm shareholders experience gains (i.e. positive abnormal returns) around the acquisition announcement. However, we

argue that no clear conclusion can be made about the potential gains or losses of bidding firms. Due to the existence of a large amount of information surrounding merger announcements, we seek to isolate bidder characteristics by applying a sophisticated research design suggested by Fuller, Netter and Stegemoller (2002). More specifically, we use a sample of bidders who make three or more bids within a three-year period acquiring public, private and/or subsidiary firms, and we observe how returns vary by target ownership status and method of payment. Fuller et al. (2002) argue that multiple bidders enjoy significant profits (i.e. positive abnormal returns) when acquiring private firms or subsidiaries. While Fuller et al. (2002) provide evidence of bidders' performance with respect to certain characteristics (i.e. method of payment, target public status), it cannot be ruled out that this result is sensitive and limited to the short-run performance. It is likely that stock prices temporarily deviate from their fundamental values due to investors' systematic over- or under-reaction to acquisition announcements. In such case, serious doubts arise towards the short-run window's ability to distinguish real economic gains from market inefficiency. We thus believe that Fuller et al.'s (2002) conclusion needs to be addressed with certain caution. As a consequence, we proceed to a complementary long-run analysis in order to reach a relatively thorough inspection of shareholders' wealth effects.

We examine the largest feasible period (1985-2004) that Securities Data Corporation (SDC) has data available for the UK merger market of multiple bidders. Such a comprehensive sample has not been studied before and it provides an updated insight of the merger activity covering also the takeover booming wave of the 1990s. The UK market appears to have a significant proportion of multiple acquisitions during this period. In our sample the firms that acquired three targets within a three-year period constitute

more than 40% of all the large, non-financial, non-utility takeovers in the UK as reported by SDC, providing a reliable testing ground for bidders' returns analysis. Another noticeable point is that we include in our sample private targets or subsidiaries, which are major components of the takeover market (more than 90% in our sample), but very few studies have taken this into account.

We use a sample of 4,173 UK acquisitions and we confirm Fuller et al's (2002) results. Namely, we find that bidders significantly gain when buying private firms or subsidiaries, but experience losses when undertaking public acquisitions. When we further partition our results on the basis of the method of payment used in the transaction (cash, stock or combination of cash and stock), we find that acquisitions of public targets have significantly negative Cumulative Abnormal Returns (CARs), irrespective of the method of payment, while the worst performance is detected for those bidders using stock as the means of payment. Nevertheless, cash and mixed offers for private firms and subsidiaries generate significantly positive returns while insignificant returns are obtained when stock is used as the means of exchange.

Moreover, when we examine acquirers' returns according to the relative size of the target to the bidder, we conclude that the larger the target relative to the bidder, the larger the abnormal returns experienced by the acquirer (i.e. the more negative abnormal returns for public acquisitions, the more positive CARs when they acquire private targets or subsidiaries). In contrast to the literature, the negative return is not so much driven by stock offers to public targets, as we also identify negative abnormal returns for cash offers. Another interesting observation is that unlike public targets, as the relative size increases,

bidders who acquire private targets or subsidiaries with stock experience greater abnormal returns than bidders who acquire private targets with cash.

Subsequently, we explore whether target origin (domestic/foreign targets) plays a significant role to shareholders' wealth. The UK has been one of the leading takeover markets over the last decades and therefore examining this issue could lead to remarkable conclusions. We are also interested in checking whether the results obtained above remain similar when we control for the target domicile. Diversifying/non-diversifying acquisitions are also investigated to confirm whether our above main patterns are altered. Overall, the general return pattern holds even when target domicile and industry are taken into consideration.

Further, we examine whether our patterns stand when we control for bidders' book-to-market ratio. Such analysis is also used to further confirm the robustness of our initial hypothesis (i.e. the research design we follow allows us to control for much of the information about bidder characteristics contained in the returns at the acquisition announcement). Therefore, we examine the announcement returns of bidders with low book-to-market ratio against bidders with high book-to-market ratio. We detect that low book-to-market ratio acquirers significantly outperform high book-to-market acquirers for private targets and subsidiaries, while the opposite patterns are reported for bids of public targets. The overall results enhance our assumption that announcement market returns are not affected by bidders' characteristics and also that the general patterns stand when we control for book-to-market ratio.

However, when we employ a long-run investigation of bidder returns we come up with a completely different picture regarding shareholders' wealth. More specifically, we find negative abnormal returns irrespective of the target ownership status (i.e. public, private or subsidiary) or the method of payment used in the transaction. This is very likely to be associated with market overreaction experienced by private targets and/or subsidiaries at the merger announcement, which subsequently leads to negative abnormal returns. In addition, we find consistent with the literature that stock acquisitions lead, on average, to worse share price performance of bidding firms.

Furthermore, we underline and provide evidence of the impact of method of payment on bidders' returns. For public targets our results are not driven by the use of stock as a form of financing as the related literature suggests, since we obtain negative abnormal returns for both cash and stock offers. On the other hand, we encounter an opposite pattern for private targets and subsidiaries, since the bidders exhibit positive performance for both cash and mixed payments (insignificant returns are obtained for share exchanges).

In Chapter 3 we seek to identify whether some factors, namely market conditions (market valuations or merger waves) affect bidder performance and consequently shareholders' wealth. A large body of the literature documents that mergers occur when the stock market has an upward trend. Particularly, recent studies connect takeover activity with stock market performance. Jovanovic and Rousseau (2001) correlate high merger activity with high market valuations, while Rhodes-Kropf and Viswanathan (2003) develop a model in which firm-specific and market-wide misvaluations can cause merger waves. Shleifer and Vishny (2003) suggest that the impact of market valuation depends on method of payment, the performance of acquirers, and the occurrence of merger waves. Finally, Rosen (2005)

suggests a merger momentum in prices, providing evidence that acquirer stock prices are more likely to increase when the merger is announced in high valuation markets as compared to low valuation markets (hot versus cold markets). Hence, we explore whether stock market valuations or merger waves drive the performance of the acquiring firm's shareholders.

We employ a sample of 3,512 domestic acquisitions announced between 1 January, 1984, and 6 May, 2004, and investigate short- and long-run bidder returns. We classify the market into high-, neutral- or low-valuation periods based on the P/E ratio of the TOTMKUK index and, for robustness reasons, on the TOTMUK index itself. Each month is classified as high (low) valuation when it lies in the top (bottom) half of month with P/E ratios above (below) the past five-year average P/E. All other months are classified as neutral. In addition, we examine the share price performance of acquiring firms according to the level of merger activity they experienced. We classify each month as a hot or cold merger month respectively, after ranking each month according to the number of mergers, and identifying whether this month lies in the top or bottom 30% quartile with the largest or smallest number of mergers respectively.

Overall, acquirers enjoy significant profits during the five-day window surrounding the event announcement. Consistent with the literature, we find significant gains for cash acquisitions, while negative CARs are obtained when stock is used in the transaction. When we split our sample on the basis of target type, we find that bidders experience positive abnormal returns when purchasing private firms or subsidiaries, but loss is experienced when public targets are acquired. On the whole, the return pattern is qualitatively similar to the one obtained in Chapter 2 for frequent acquirers. When we

partition the sample by the market's valuation at the acquisition announcement, we obtain positive and significant abnormal returns in high-valuation periods, while insignificantly positive CARs are obtained during low-valuations periods. Results are robust when we use both the P/E TOTMKUK index and the TOTMKUK index itself to characterize market valuation and also when a different event window (-20, +20) is engaged. Such a finding indicates that the market is likely to reward acquisitions undertaken during a bullish market, while it appears indifferent to acquisitions initiated when stock prices are low. Moreover, when we explore bidder performance taking into account the merger activity, we find that cold markets (i.e. markets with a small number of successful acquisitions) lead to larger positive abnormal returns than hot markets, reflecting that acquirers are more careful in the evaluation of synergies before they decide to proceed to the completion of an acquisition during cold merger periods. Finally, when we investigate the interrelationships between the overall state of stock market valuations and merger activity, we identify that during high valuation periods more positive abnormal returns are enjoyed regardless of the number of mergers completed, while an inverse relationship is not the case. As a consequence, we argue that stock prices and not merger activity drive bidder performance, although a link is likely to exist between them.

Subsequently, we examine bidder returns in the long run. We find consistent to the results obtained in Chapter 2 that acquirers experience negative and significant abnormal returns. Nevertheless, we report a worse performance on average for acquisitions conducted during high-valuation periods than low-valuation periods. In general, when we control for payment method used or target public status, low-valuation acquisitions outperform on average high valuation acquisitions. This pattern stands after acquirer's market valuation (B/M) is taken into account. The initial generally positive reaction of the market to high-

valuation acquirers reflects that the market learns only gradually that many of the mergers undertaken during boom periods were imprudent and careless. In contrast, when stock prices are low, acquisitions lead to insignificantly positive announcement returns but, in the long-run, these acquisitions exhibit better performance. This indicates that the market learns over time that, despite its initial skepticism, these acquisitions can have better potential. For both high- and low-valuation acquisitions the market reaction at the announcement stands in contrast to the market's long-run view of the firm's performance.

Further we confirm that our results are not just capturing long-run stock price reversals by calculating the pre-event performance of each acquirer in the high and low-valuation period for the six-month period preceding the acquisition announcement. High-valuation acquirers are ranked in order of their pre-event abnormal returns and placed into two groups. The same procedure is followed for low-valuation acquirers. We document that high valuation acquirers who generated high pre-event returns have negative abnormal returns consistent to long-term reversal. However, high-valuation acquirers who experienced negative pre-event returns also do poorly in the long-run, suggesting that the negative average abnormal returns cannot be attributed to long-term reversals of stock returns since the acquirers had negative returns prior to the merger announcement. We conclude that high-valuation acquirers underperform relative to low-valuation acquirers in the long-run because managers are making poorer acquisition decisions during high-valuation periods.

Finally, we seek to identify a plausible reason for the underperformance of high-valuation acquirers relative to low-valuation acquirers in the long run. In particular, we suggest that managers are likely to engage in herding behaviour. This means that managers are likely

to follow a created herd during a merger for personal prestige reasons and because they do not want to be considered as players out of the "merger game". We document empirical evidence consistent with herding. More specifically, early movers, defined as the earliest 10% of all acquisitions announced during a high-valuation wave, have significantly worse performance than late movers (the remaining 90% of high-valuation merger waves), as suggested by the significant difference reported when employing a zero investment portfolio. This finding constitutes a reasonable explanation for the return pattern obtained in the long-run.

In Chapter 4, we argue that psychological biases function as deterministic factors of a manager's corporate decision to get involved with M&As. Managers' acquisitiveness (i.e. propensity to acquire companies) within a short span of time is used as a proxy of overconfidence in order to examine whether mergers serve the interests of the acquiring firm's shareholders when managers are overconfident. In general, the main intuition lying behind our conjecture is that overconfident managers overestimate their abilities to select profitable investments and the synergy gains between their company and a target. In addition, they are less likely to negotiate efficiently and realize decisions that are in a great contradiction to rational managers' beliefs.

We classify managers as overconfident when they are frequent acquirers (i.e. conduct five or more acquisitions within a three-year period) according to the exact definition provided by Fuller, Netter and Stegemoller (2002). Intensive acquisitiveness is a direct measure of overconfidence and consistent with Heaton (2002) who argues that overconfident managers undertake more corporate investment projects. A larger number of transactions is suggested by the asset pricing literature to characterize overconfident traders. In the

corporate investment context, we expect overconfident managers to undertake a significantly greater number of acquisitions. In addition, overconfidence is related to lower abnormal returns and therefore overconfident managers acquiring many firms during a short period of time experience less profits.

Using merger data from SDC and DataStream and employing standard event study methodology we find that overconfident CEOs exhibit worse performance than rational bidders after controlling for several effects (i.e. method of payment, target origin, core industry, M/B value, relative size). Our finding is also enhanced when we investigate the difference in returns within a multiple-acquirer sample and more specifically between the first and fifth-and-higher deals. Since the market reacts to first-deals of multiple acquirers just as it would do to casual acquisitions, our result shows that first-in-order deals behave like casuals and outperform significantly subsequent acquisition attempts providing a robust interpretation for the existence of overconfidence as reflected by our proxy (i.e. frequent acquirers).

Due to the fact that the dynamic acquisitiveness of frequent acquiring firms could be associated with a number of different reasons other than overconfidence (e.g. growth opportunities via a merger deal), we proceed with several robustness checks to provide evidence that various components characterizing the overconfidence notion go together with the behaviour of frequent bidders. In particular, consistent with the literature, overconfident managers exhibit proportionally higher debt capacity and strongly prefer cash or debt-financed mergers to stock deals. In addition, the bulk of the empirical evidence suggests that overconfident managers conduct diversifying acquisitions, a fact that is also strongly approved by our results.

Further, multiple acquirers are likely to be influenced by aggressive investment strategies, which lead them to overinvestment and lower future stock returns. Our findings approve that high capital expenditures characterize frequent bidders prior to their corporate transactions. Finally, acquiring firms that make many acquisitions within a short-time interval are likely to be governed by less efficient managers than those of casual-rational bidders. Our finding supports the hypothesis that frequent acquirers exhibit weaker corporate governance than casual bidders, providing one more plausible explanation for the return patterns obtained.

Chapter 2: Bidder Gains and Losses of Firms Involved in Many Acquisitions

2.1. Introduction

In this chapter we examine shareholders' wealth effects (value creation or destruction) of bidding firms that make many acquisitions over a short time horizon (three-year period). In general, the examination of merger participants' performance has been one of the most controversial researched areas in finance. Whereas the view that dominates the literature regarding the short-run perspective is that target firm shareholders enjoy significant positive cumulative abnormal returns (CARs) around the merger announcement, the effect of merger announcements on acquiring firms' share prices is far from clear.[1] On the one hand, some studies have reported that zero or small significant abnormal returns accrue to acquiring firm shareholders while. On the other hand, some other researchers have found that acquirers experience significant but small negative abnormal returns during the same period. [2]

At the acquisition announcement there is a very high variation and it is not feasible to completely attribute the stock returns to the expected effect of the acquisition on profitability, since the stock market is more about reassessing the bidder's business plan than it does about the value of the acquisition (Grinblatt and Titman, 2002).[3] In other

[1] Note that the terms bidder and acquirer are used interchangeably for the purpose of this study because all the bids in our analysis lead to a completed acquisition.
[2] For evidence on acquirers' short-run stock returns see, for example, Dodd and Ruback (1977), Asquith, Bruner and Mullins (1983), Dennis and McConnell (1986), Bradley, Desai, and Kim (1988), Franks and Harris (1989). For evidence of combined firms see, for example, Bradley, Desai, and Kim (1988), Mulherin and Boone (2000), Andrade, Mitchell, and Stafford (2001).
[3] In the literature the concept 'mergers' differs to the concept 'acquisitions', since the first is usually described as representing a 'friendly' union of two firms of roughly equal size, while the latter implies a more hostile

words, the announcement of an acquisition appears to contain information about numerous issues. For instance, according to Hietala, Kaplan and Robinson (2003), a merger announcement reveals information about the bidder's overpayment, the stand-alone values of the bidder and target or potential synergies in the combination. Hence, it is often impossible to isolate the above effects from the observed abnormal returns.

Fuller, Netter, and Stegemoller (2002) applied a sophisticated research design to control for (much of) the information about bidder characteristics contained in stock returns at the acquisition announcement.[4] They investigated the returns to US frequent bidders making five or more bids within a three-year time horizon. As they argue, the sample of frequent bidders allows holding bidder characteristics constant when examining the pattern of announcement returns.[5] In general, the authors conclude that bidders experience significant wealth loss when buying public targets, while they earn substantial gains when private and subsidiary targets are purchased. This is, however, a premature conclusion as short-run event study conclusions rely strictly on the assumption of market efficiency. Nevertheless, it is possible that stock prices temporarily deviate from their fundamental values due to investors' systematic over- or under-reaction to acquisition announcements. In such case, serious doubts arise towards a short-run window's ability to distinguish real economic gains from market inefficiency. Accordingly, Healy, Palepu, and Ruback (1992) posit that: "From a stock price perspective, the anticipation of real economic gains is observationally equivalent to market mispricing". This view indicates that, indeed, short-

character of a takeover. Note, however, that we use the terms 'mergers' and 'acquisitions' interchangeably in our analysis.

[4] Fuller et al. (2002) is the first major attempt in examining takeover announcement returns of multiple bidders involved in acquisitions of public, private, and subsidiary targets with alternative methods of payment between 1990 and 2000.

[5] Fuller et al. (2002, p. 1792) argue, "Since we control for acquirer characteristics in that the same bidder will often choose to acquire targets with varying ownership status, and with different payment methods, we can examine the variation in acquirer returns as a function of these bid characteristics."

run systematic under- or over-reaction to an event has gradually become accepted in the literature. Fama himself, the father of the efficient market hypothesis, has recently conceded that stock prices could become "somewhat irrational".[6] In a nutshell, the voluminous literature related to behavioural finance emphasizes that results generated by short-run event studies need to be interpreted with further scepticism.

We thus believe that Fuller et al.'s (2002) conclusion needs to be treated with a certain caution. In this case, we argue that a complementary long-run analysis in this context is considered essential in order to reach a relatively thorough investigation of shareholders' wealth effects. If the long-run results mirror the short-run findings, we can then be more confident in accepting their short-run conclusions. However, if the short-run evidence is not supported by the long-run results, we can then cast doubt on whether Fuller et al.'s (2002) suggestion is economically sound and intuitive or merely a potential product of short-run market inefficiency. In addition, of course, such findings have not been tested in other countries apart from the US.

We examine the largest feasible period (1985-2004) that Securities Data Corporation (SDC) has data available for the UK merger market of multiple bidders. Such a comprehensive (near exhaustive) sample has not been studied before and it provides an updated insight of the merger activity, also covering the takeover booming wave of the 1990s. The UK market appears to have a significant proportion of multiple acquisitions over this period. In our sample the firms that acquired three targets within a three-year period make more than 40% of all the large, nonfinancial, nonutility takeovers in the UK

[6] 'As two economists debate markets, the tide shifts. Belief in efficient valuation yields ground to role of irrational investors Mr. Thaler takes on Mr. Fama', The Wall Street Journal, October 18, 2004.

as reported by SDC, providing a reliable testing ground for bidders' returns analysis. Another noticeable point is that we include in our sample private targets and subsidiaries, which are major components of the takeover market (more than 90% in our sample), a fact that very few studies have taken into account.

We use a sample of 4,173 takeovers and we show that bidding firms experience significantly negative abnormal returns when acquiring public targets, while they exhibit significantly positive abnormal returns when buying private or subsidiary targets. When we differentiate our results on the basis of the method of payment used in the acquisition (cash, stock or combination of cash and stock), we find that acquisitions of public targets have significantly negative CARs irrespective of the method of payment, while the performance worsens when stock is used as form of financing. Nevertheless, for subsidiary and private targets, bidders' returns are significantly positive for cash offers but insignificantly positive when stock is used as medium of exchange. Interestingly, acquirers exhibit better share price performance when buying subsidiary targets. In addition, there is weak evidence that diversified parents will sell subsidiaries at a discount relative to non-diversified parents.

Furthermore, when we portion acquirers' returns dependent on the relative size of the target to the bidder we find that for public targets, the larger the target relative to the bidder, the more negative the acquirer's CAR. In contrast to the literature, the negative return is not driven by stock offers to public targets, as we identify negative abnormal returns for cash offers as well. However, for both private targets and subsidiaries the return becomes more positive as the target size increases. Noticeably, unlike public targets, as the

relative size increases, bidders who acquire private targets with stock experience greater abnormal returns than bidders acquiring private targets with cash.

We then examine whether target origin plays a significant role to the shareholders' wealth. The UK has been one of the leading participants in international takeover markets over the last decades and therefore stressing this issue could provide some motivating conclusions. In addition, and most importantly, the literature suggests that cross-country acquisitions have a significant impact on bidders' returns and in general affect their performance. We find that multiple bidders conducting foreign acquisitions outperform the performance of companies acquiring domestic firms. Another remarkable result is that stock payments for foreign targets offer outstanding returns to bidders' shareholders. Moreover, we examine whether corporate diversification affects shareholders' wealth. According to the literature, acquisitions of firms belonging to different industries than those of the bidder have an impact (positive or negative) to the acquiring firm's shareholders. Putting both together, we conclude that our findings are robust even after cross-country and cross-industry effects are taken into consideration.

In order to further confirm the robustness of our initial hypothesis (that the research design we follow allows us to control for much of the information about bidder characteristics contained in the returns at the acquisition announcement) and also that our above patterns hold when we account for book-to-market ratio, we examine the announcement returns of glamour bidders (firms with low book-to-market ratio) versus value bidders (firms with high book-to-market ratio). We find that glamour acquirers significantly outperform value acquirers for private targets and subsidiaries, while the opposite patterns are reported for bids of public targets. The overall results enhance our assumption that announcement

market returns are not affected by bidders' characteristics, while similar to previous analysis patterns are obtained when we control for book-to-market ratio.

In brief, the very different and relatively opposite performance of bidders acquiring private targets or subsidiaries compared to bidders buying public firm can be charged to the problem of liquidity that the former targets confront, meaning that they cannot be bought and sold as easily as public firms. Therefore, in order to create an incentive to the market as a profitable investment opportunity, they offer their shares at a discount. This strategy of liquidity discount becomes even more essential due to the lack of an auction-like atmosphere that is common for public targets. Moreover, managers of private firms are relatively more open than public firms to sell their company due to their desire to cash out. As a result this drives them to lose a large part of their advantage of effective bargaining position, and therefore to sell their companies at a lower value, rather than under different circumstances.

Nevertheless, in the long-run analysis, we find that abnormal returns reverse over time since bidders experience negative share price performance regardless of the public status of the target or the method of payment employed. Consistent with the vast majority of the literature, we confirm the significant underperformance of bidding firms that acquire public companies over a long-time horizon, while bidders who buy unlisted targets exhibit on average less negative abnormal returns. In addition, with respect to the method of payment used in a takeover, we provide evidence that stock as a means of exchange for public targets leads on average to the most damaging post-acquisition share performance of bidders. Moreover, we show that our results are not simply a manifestation of momentum and therefore the results are not just capturing long-run stock price reversals.

In general, our results demonstrate that positive abnormal returns are present only in the short-run (i.e. at the acquisition announcement). Bidders gain when buying private or subsidiary targets and lose when purchasing public targets. This finding is fully consistent with Fuller et al. (2002). In addition, we provide further evidence to the short-run study by taking into account bidders' book-to-market ratio (value/glamour), core-industry (diversified/non-diversified), and target origin (foreign/domestic). On the other hand, our long-run results show that bidders experience significant losses regardless of the type of target acquired. This finding implies that the stock market may overreact in the short-run and its prices are gradually corrected in the long-run. Hence, our evidence raises a big question mark about Fuller et al.'s (2002) conclusion as the short-run economic gains (i.e., the reflection of the acquisition synergies) of buying private and subsidiary targets cannot be materialized in the long-run.

Moreover, we underline and provide evidence of the impact of the method of payment on bidders' returns. For public targets, surprisingly, our results are not only driven by stock acquisitions as the related literature suggests, since we obtain negative abnormal returns for both cash and stock offers. On the other hand, we draw exactly the opposite picture for private targets and subsidiaries, since the bidders exhibit positive and significant performance for cash (higher returns in this case), even in the case of almost simultaneous public and private bids.

The remainder of this chapter is organized as follows: the next section reviews the related literature. In section 2.3 we describe the data and the methodologies we follow. Section 2.4 reports the empirical evidence of our research and the interpretations of the results, while in section 2.5 we provide a summary and conclude our chapter.

2.2. Literature review

2.2.1 Bidder Returns: Public Targets

One of the most extensively researched, but at the same time argumentative, areas in finance has been whether mergers create value for the shareholders of the bidder and target firms. A clear conclusion in both US and UK studies proves that shareholders of target firms receive economically large and statistically significant wealth gains. However, reported returns to bidder firm shareholders are quite ambiguous, since either small positive, negative (the largest body in the literature) or zero returns have been recorded.

In their widely cited survey of the share price consequences of takeover bids, Jensen and Ruback (1983) review the evidence on returns to acquiring firms over the immediate bid announcement period and draw the conclusion that bidders' shareholders do not lose from acquisitions. Subsequent studies document considerable divergence in announcement period returns that is systematically associated with method of payment, as predicted by Carleton et al. (1983).

Jarrell, Brickley and Netter (1988) examined the data on returns to shareholders of acquiring companies for a sequence of decades. For the 1960s, they obtained quite similar results to Jensen and Ruback (1983). For a window of 15 days [-10, +5], the excess returns to successful bidders in tender offers were 4.4%. When the window was extended to 20 days after the event date, the Cumulative Average Returns (CARs) rose to 4.95% and were statistically highly significant. For the 70s, the excess returns dropped to approximately 2%, while for the 80s they became negative at about 1%, but were not statistically significant.

In another study for US companies participating in a merger activity, Bradley, Desai and Kim (1988) documented similar results for tender offers. In numbers, they reported that for subperiods approximating the 1960s, the excess returns to acquiring firms were slightly over 4% and in general the abnormal returns to acquiring firms for the total period 1963 to 1984 were positive and significant.

The first major study of UK acquisitions by Firth (1980) examines bidders in 434 successful bids and 129 unsuccessful bids over the period from 1969 to 1975. It uses a market model with parameters estimated using pre-event data, and finds that bidding firms experienced statistically significant negative residuals (-6.3% for the announcement month). Limnack (1991) examines the post-acquisition performance of acquirers in 448 successful and 81 unsuccessful bids announced during 1977-1986, where abnormal performance is measured relative to the market index (a market model using London Business School (LBS) beta and alpha values is applied). He finds that CARs for completed bids for the period from the beginning of the bid month to the end of the completion month are an insignificant –0.2% for bidders.

A very interesting study was presented by Higson and Elliott (1993), who used the simple Dimson and Marsh (1986) size-decile control method (performance was measured by a 'zero-one' market adjusted model) to consider size effects. The study covers 726 acquisitions between 1974 and 1990 and concludes to announcement returns of -4.4% (-3.90% on a 'zero-one' basis). Sudarsanam, Holl and Salami (1996) investigate announcement period returns associated with 429 UK bidders over the period 1980-1990. Overall, they find significant CARs of -4.04% over the period [–20, +40] days around the bid announcement date. Gregory (1997) presents a rather exhaustive work on returns (six

models are used: CAPM, Dimson and Marsh Risk and Size Adjustment (DM), Simple Size control portfolio (SS), Multi-Index model (SML), Value-Weighted Multi-Index Model and Fama-French three-factor model). His sample has a maximum of 452 acquisitions for models which do not require market capitalization, and a minimum of 403 (for the Dimson-Marsh, 1986, size and risk control model). In all cases, announcement returns are significantly negative varying from –0.30% to –0.71%. Similarly, Holl and Kyriazis (1997) display significantly negative average residuals for the announcement month (-1.7%) for a sample of 178 bids covering the period 1979-1989. On the other hand, Higson and Elliott (1998) find positive bidders' announcement returns (0.43%), by using a sample of 30 successful takeovers during the period 1975 to 1990. In addition, Sudarsanam and Mahate (2003) use a sample of 519 acquirers over a 1983-1995 period. The study applies the Buy-and-Hold Average Residuals (BHARs) model, using four different benchmark models, and concludes that the whole sample of acquirers experiences statistically significant negative abnormal returns of about -1.4%. Finally, in the most recent UK M&A study, Draper and Paudyal (2005) report that acquirers of listed targets do not experience any substantial change in their share price around the announcement of bids; they either break even or suffer a small loss, depending on the excess return metric.

2.2.2. Bidder Returns: Private Targets

There is very little evidence on shareholders' wealth effects when the target is a private company and also the impact of its relationship with the method of payment used in the transaction.

Chang (1998) examines the announcement returns (two-day window) of bidding firms acquiring 281 privately held targets during the period from 1991 to 1998 and compares them to bidder returns for 255 public targets from 1981 to 1988. The main findings are the positive abnormal returns (2.64%) in stock offers (in contrast to the results in which the target is publicly traded) and also the zero abnormal returns when the method of payment is cash, consistent with the studies of Wruck (1989) and Hertzel and Smith (1993). One explanation, given by Chang (1998), for the above results is the *information hypothesis.* Although the bidding firm's managers disclose private information to the shareholders, in the case of a private target, its shareholders appear to be extremely careful in the evaluation of information and their final decision, because they will end up holding a large amount of bidding stock. One way to avoid the "double lemons" impasse is through the exchange of information among bidders and targets that reduces their joint information asymmetry.[7] As a consequence, the acceptance of a stock offer conveys to the market favourable information on the prospects of a bidding firm and a signal that the deal is expected to create value (positive NPV of bidders) or, more weakly, that the bidder's shares are not overvalued. Furthermore, in general, the positive performance of bidders when the acquired firms are private is supported by the *limited competition hypothesis*. If the market is competitive, the acquisition will be a zero NPV project (no abnormal returns for acquisitions with cash). However, if competition is limited then positive returns are exhibited for bidders because the likelihood of underpayment is high. Finally, Chang (1998) suggests the *monitoring hypothesis.* By using stock as a means of payment, acquirers tend to create outside blockholders because the targets are owned by a small group of shareholders. These can increase the firm's value because they can serve as

[7] Both the 'double lemons' problem and information asymmetry are explained in section 2.2.4.

effective monitors of managerial performance or facilitate takeovers.[8] More specifically, he finds 4.96% and 1.77% announcement abnormal returns if a new blockholder is formed or not respectively. Large blockholders can be created for public firms as well, however, in fact these firms have less concentrated ownership[9] and therefore higher agency conflicts than private firms.

Hansen and Lott (1996) also examine the announcement returns to bidders acquiring both public and private targets. They show that bidders earn on average 2% higher returns when they acquire a private firm. The explanation they offer, in turn, for this result is that since investors are diversified the aim of the manager of a firm is not to maximize shareholder value but, instead, to maximize the value of the shareholder's portfolio. Hence, when a publicly traded firm acquires a public target, diversified shareholders will be indifferent to the way the gains from the acquisitions are divided, assuming they hold stock in both firms, a condition which is unlikely to be met for private firms. However, the opposite will happen in the case of a private target, since the bidder's shareholders will capture part of the gains of the acquisition, assuming the bid is value increasing.

Da Silva Rosa et al. (2001) document more or less similar results (signalling implications of the method of payment are likely to differ across bids for public and private targets) in their research concerning a sample of private and public Australian bids. Cash based bids generate a significantly positive return of 3.26%, but share bids earn an insignificant

[8] On the other hand, increase in managerial ownership can decrease firm value if it allows managerial entrenchment or makes takeovers more costly.

[9] However, this differential may to some extent be offset if we take notice that the relative size of public targets is generally larger than the private target's one. Therefore they either hold a larger ownership stake in the bidder, or private managers may not be interested in becoming effective monitors, since they may use the takeover activity as an exit strategy. In addition, private deals are almost all completed, while the public deals may not be completed.

average return of 1.65%. In addition, in both cases the excess returns to bidders of private targets are significantly higher than the excess returns to bidders of public targets. Da Silva Rosa et al. (2001) argue that it is likely that the level of competition in the market for corporate control is lower for private targets and this can also be expected to affect acquiring firms' returns from acquisitions. Auction-style takeovers (which are mainly accompanied by decreasing returns for acquiring firms) is a common phenomenon in public targets since there is no cost for obtaining information and more is known about the target. On the other hand, privately held firms are not obliged to release relevant valuable information to the public. Therefore the higher cost of obtaining information on privately held firms is very likely to be associated with higher returns for the acquiring firms since they capture a greater proportion of the expected gains, particularly if there are only few firms with whom the target may reap synergistic gains.

Ang and Kohers (2001) use a sample of 7,070 US acquisitions from 1988 to June 1992 and document substantial gains for bidders regardless of the method of payment (positive and statistically significant for both cash and stock). Two main interpretations are provided: First, it appears, as already discussed above, that private firms have concentrated ownership which enables them to have lower agency conflicts, while public firms generally have more dispersed ownership. Second, bidders avoid the public pressure from outside investors and therefore they have the opportunity to avoid hubris-motivated takeovers. This gives them the 'privilege' to stop any negotiations without incurring high 'prestige' costs. In addition, the nature of bidding private targets 'auto-protects' the acquiring company by the managers' empire building incentives, since in most cases such acquisitions do not offer them the prestige they pursue.

2.2.3. Bidder Returns: Subsidiary Targets

There are three papers that we are aware of in the literature which examine bidding returns when the target is a subsidiary firm and which at the same time take notice of the method of payment. Fuller et al. (2002) use a sample of 539 US bidders that make many acquisitions (3135) within a three-year period. They provide evidence that acquiring firms exhibit significantly positive returns (2.75%) when purchasing subsidiary firms, and these returns become higher (3.23%) when stock is used as a method of payment. Moeller, Schlingemann and Stulz (2004) also find positive and significant abnormal returns for acquisitions of subsidiary targets. According to Fuller et al. (2002), one reason why a firm sells a subsidiary is to gain from increased focus, and therefore diversified firms might accept a relatively lower price for an asset sale than a non-diversified firm. However, there is poor evidence that diversified parents will sell subsidiaries at a discount relative to non-diversified parents.

In addition, Faccio and Masulis (2005) posit that when a subsidiary acquisition takes place cash is preferred as a method of payment. Bidders are likely to prefer cash, given the illiquid and concentrated nature of their portfolio holdings and the often-impending retirement of a controlling shareholder manager. Similarly, corporations selling subsidiaries are often motivated by financial distress concerns or a desire to restructure towards their core competency. Consequently, there is strong preference for cash consideration in order to realize these financial or asset restructuring goals and also due to the fact that bidders are frequently motivated to divest subsidiaries to finance new acquisitions or to reduce their tax burden.

2.2.4. Method of Payment in Mergers and Acquisitions

2.2.4.1. Empirical Findings

Fishman (1989), Berkovitch and Narayanan (1990), Brown and Ryngaert (1991) document higher returns for cash offers than stock offers at the bid announcement. Travlos (1987), among others, by using a sample of US public targets, finds negative returns because of stock financing regardless of the outcome of the bid (successful/unsuccessful) and positive returns for cash offers. His results are also independent of the type of takeover (merger, tender offer). In sum, generally the stock (or mixed) offer reflects negative information about the bidder, whereas zero returns are displayed for cash offers. Therefore, it seems that a crucial issue concerning the determinants of acquiring firms' returns is the means of payment that is used at the acquisition.

2.2.4.2. Determinants of Method of Payment

2.2.4.2.1. Asymmetric Information – Signalling Hypothesis

Bidding companies pay the shareholders of the target firms using a variety of means. Common practices include payment in cash, exchange of shares, and a combination of both (shareholders may be given a choice). The most common argument for the choice of cash or stock, as the method of payment, is the information asymmetry-signalling hypothesis that arises. In the absence of full information regarding the value of a merger (for example, the estimated value of potential benefits to be achieved through synergy) the mode of payment conveys a signal to investors. Myers and Majluf (1984) and Leland and

Pyle (1977) argue that the premise of information asymmetry raises the proposition that managers with private information that their firm's shares are overvalued offer these shares in takeover bids. Outside investors, recognizing the *adverse selection problem*, consequently revise their estimate of the offer's value downwards. The target's shareholders also demand a higher premium to compensate for the 'lemons' problem in share-based bids, and therefore this seems a plausible explanation for the negative share price performance of bidders when they use stock in takeovers.

Hansen (1987) and Fishman (1989) enrich the asymmetric information hypothesis by considering the case where the target firm's managers are better informed about their firm's value. Hansen (1987) posits that when bidders and targets have private information, then a 'double lemons' problem is set up, since bidders do not offer stock when they believe their shares are undervalued and targets only accept cash when their share value (based on their private information) is less than the offer. In other words, the double lemon problem sources from both bidders' and targets' managers recognizing the adverse selection bias in the other's decision. Hansen's (1987) model addresses the issue of uncertainty in target valuation, and therefore in this case a stock offer is suggested as it has 'a contingency pricing effect'. In such a case, targets are forced to share part of the risk that the stock is overvalued.[10] In any case, Hansen's (1987) model predicts that cash offers always send a credible signal that the bidder's shares are undervalued and also they should be selected when there is high uncertainty on their own firm's value, while a stock offer should be made when there is high uncertainty on the target's value.[11] This uncertainty (asymmetry) is likely to rise as the targets' assets rise in value relative to those of a bidder (Faccio and Masulis (2005)).

[10] In cash offers the bidder bears the entire cost of overpayment (Eckbo et. al., 1990).

In Fishman's (1989) analysis, bidding firms decide between cash and share offers on the basis of their private information about the value of the merger. Bidders who estimate a high value make high preemptive cash bids to deter potential competing bidders, assuming that the bidder's expected pay off is decreasing in the initial bidder's valuation of the target. However, targets with private information about their own value make cash exchange risky for the bidders because of the adverse selection problem. In sum, a cash offer has the advantage of preempting potential competing bidders, while the advantage of a share offer is that it induces the target to make an efficient accept/reject decision and thereby reveal its private information about expected future cash flows. Fishman (1989) predicts that an initial bidder's expected pay off is higher if cash is offered rather than shares. Similarly, Berkovitch and Narayanan (1990) argue that bidders whose private information is more favourable regarding either their own pre-merger values or the synergy use cash and this explains why bidders' prices react more favourably to cash rather than stock offers.

2.2.4.2.2. Relative Size Proposition

Numerous studies have also been launched with regard to the impact of relative size of target-to-bidder on payment methods. According to Jensen and Ruback (1983), the return of bidders depends on the relative size of targets. The main findings are: i) the larger the relative size of targets to bidders, the higher the CAR will be (Asquith et al. (1983), Jarrell and Poulsen (1989) and Kang, (1993)). This is linked to the suggestion made by Loderer and Martin (1990) who claim that large firms seem to pay too much for their targets and large bids seem to be overpriced on average- facts that deteriorate the share price

[11] Berkovitch and Narayanan (1990) and Eckbo et al. (1990) show that higher valued bidders will use cash or a higher proportion of cash to signal their value to the market.

performance. Ang and Kohers (2001) proceed to a further analysis concerning relative size, supporting first that the relative size of target to bidder is critical to the bidder's performance, and second that the acquiring return when bidding for a public target is significantly smaller than the return when bidding for a private target. ii) The larger the size of the target firm, the more likely the acquirer is to use share financing in M&A deals (Myers and Majluf (1984) and DeAngelo et al. (1984)). Grullon, Michaely and Swary (1997) examine 146 mergers during the period 1981-1990 to explore the determinants of payment methods by testing the capital position of the merged companies, the relative size of targets, and the return on equity of both parties. They find that share exchange is more likely to be used in mergers where targets have a high capital adequacy relative to the bidders as indicated by the higher ratio of share-to-cash, which is equal to 2.12%.

2.2.4.2.3. Managerial Ownership Proposition

The choice of financing alternatives in corporate acquisitions must be related to the managerial ownership fraction of both parties (acquirer and target). It is often viewed that the greater the management's share of the acquiring or target firm, the more likely cash financing is adopted. One explanation of this strategy in M&A deals is that the managers of both parties offer (or accept) cash as the medium of exchange in order not to dilute their already existing control after the acquisition. Stulz (1988) examines the relationship between the choice of payment methods and the managerial ownership of acquiring firms. His study shows that the larger the fraction of the ownership held by the acquiring firm, the less likely an acquisition is financed by using a share exchange. Under such a circumstance, the management of the bidder is reluctant to offer shares in order to avoid diluting their original control after the acquisition.

Amihud, Lev and Travlos (1990) use a sample of 209 US acquisitions during the years 1981-1983 and document negative returns for bidders that use stock financing, as a means of exchange, and have low managerial ownership. They find that in cash financing deals the top five officers and directors of the firm hold about 11% of the company's shares, while in share financing, less than 7% are held by them. This result indicates that managers with relatively higher shareholdings in their firms prefer financing acquisitions with the use of cash to share, because, as Amihud et al. (1990) point out, they do not want to increase the risk of losing control after the acquisitions.[12] However, given the above argument, the use of stock may signal to investors that the acquisition is not value decreasing.

Finally, Faccio and Masulis (2005) argue that cash is the method of payment that should be preferred when preserving control is important for bidders, especially under circumstances where continued corporate control is threatened. The corporate control incentives to choose cash are likely to be strongest when a target's share ownership is concentrated. On the other hand, stock financing would have better effects if the shareholder has supermajority voting rights because, in this case, it would not have the opportunity to threaten the continued control of shareholder.

2.2.4.2.4. Taxation Implication Proposition

It is well known that any capital gains must be realised immediately for tax purposes due to higher depreciation tax shields (Carleton et al. (1983)). Therefore, a cash offer in M&As could, in theory, bring about higher premiums when compared with a share exchange. In other words, due to the existence of different tax treatments, the acquirer must pay a

[12] The same view is analyzed by Martin (1996).

higher acquisition price in the case of the cash offer to offset the tax burden of the target shareholders, while many stock exchanges will be treated as tax-free transactions. This proposition has long been addressed and confirmed by earlier studies.

Wansley, Lane and Yang (1983) link their study to the relationship between the tax status and payment methods. They find that targets' returns are higher when financed by cash (33.54% by cash versus 17.47% by stock) and contribute this result to the taxation implication theory. They conclude that the fact of the substantially higher returns to target shareholders when financed by a cash offer indicates that acquirers need to pay the additional tax burden for the targets under such a circumstance. In this respect, a share exchange will defer the tax consequences until the share is eventually sold. If this is valuable, they may accept a discounted price and therefore, due to the lower price, bidders will perform higher returns under a stock offer.

According to Harris, Franks and Mayer (1988), however, there seems to be no clear evidence showing that the capital gain taxes are the main concern of the acquisition financing when cash is used in this circumstance. As they show, cash financing in the period 1965-1969 declines (with a percentage of 18.6%) when compared with that of the previous period 1960-1964 (29.2%). However, this trend was reversed from 1975 to 1979 with the proportion of cash financing rising to 33.6%. Consequently, this empirical evidence does not show a strong linkage between the capital gain tax and the use of cash as the medium of exchange.

2.2.4.2.5. The Growth Opportunity Proposition (Glamour Vs Value Acquirers)

Glamour acquirers are those firms that are highly valued as a result of their prior stock market performance. Their stocks receive premium ratings in the form of low B/M value. In contrast, firms with high B/M value ratings are undervalued, but they may have the potential for subsequent value gains (high growth opportunities). In other words, glamour stocks are high growth firms and value stocks are low growth firms. Rau and Vermaelen (1998) suggest that glamour acquirers outperform value acquirers after merger, irrespective of the payment method used.[13] In some ways the market fails to understand that past managerial performance is not necessarily a good indicator of future performance, at least in the case of acquisitions.[14] This result is in contrast to their findings for the long-run performance of bidding firms. They also report a significant tendency of glamour acquirers to finance their acquisitions with their own stock[15] and this tendency is stronger in mergers than in tender offers.[16]

Taking the above into consideration, the alternatives for payment methods used in M&A deals depend, to some extent, upon the acquiring firm's growth opportunities. Martin (1996) uses a sample of 846 US acquisitions for the period 1979-1988 and finds, in contrast to Rau and Vermaelen (1998), that acquiring firms with greater growth opportunities (value acquirers) are more likely to use share exchange in acquisitions. A

[13] The main argument here is the extrapolation hypothesis that explains the differential performance of glamour and value acquirers. Acquirers commanding a high market rating due to their recent performance and expected future performance (glamour acquirers) may act out of overconfidence or hubris in making acquisitions. The stocks of such companies may also be overvalued and although the managers may be aware of such overvaluation, the stock market may be not.

[14] However, Sudarsanam and Mahate (2003) find, by using a sample of UK public firms, that overall value acquirers outperform glamour acquirers at bid announcement.

[15] Consistent with the information asymmetry argument, glamour acquirers tend to have high past share price returns, while the opposite is true for value acquirers. Hence, it seems plausible for glamour acquirers to use their 'overvalued' equity as a method of payment and value acquirers to use cash for the opposite reasons. This view is also supported by Dong et al. (2005).

possible interpretation of this result is that acquiring firms would need more cash (if available) under such a circumstance to satisfy their growth opportunities, while they would also aim to mitigate the possibilities of overpayment (especially when the target's B/M value is also high).

2.2.4.3. Joint Method of Payment

The form of cash-share combination has most commonly been used in the UK rather than in the US. The literature provides ambiguous results with regards to the empirical evidence from acquiring firms' abnormal returns when they select to use both cash and stock as the method of payment. For example, Eckbo et al. (1990) find significantly positive abnormal returns for mixed offers, which are also higher than for either all stock or all cash bids. On the other hand, Travlos (1987) and Asquith, Bruner and Mullins (1983) find negative excess returns for combined cash/stock offers.

According to Eckbo et al. (1990) it appears that there is a relation between mixed payment and the bidder's private information about its value and the value of the synergy, as well as that only mixed payments contain signalling information and synergy revaluation components. As they suggest, two-sided information asymmetries between the bidder and the target firms can lead to an optimal mix of cash and stock as payment in the transaction, while the value of the bidder's residual claim increases with the size of cash offer. Blackburn et al. (1997) argue that the joint method of exchange functions as a viable mechanism for overcoming the information asymmetry dilemmas (pure cash or stock). In

[16] In our study, we will not investigate the differential performance of mergers and tender offers, since in the UK the vast majority of offers are tender offers.

addition, the combination of cash with stock payment may represent the only instance in which both signalling and re-evaluations exist.

2.2.5. Domestic Vs Foreign Targets

The growth of Foreign Direct Investment (FDI) has been one of the most remarkable features of the worldwide economy. A key characteristic of this growth is the form it has taken. FDI can take a variety of forms including the establishment of 'green-field' sites and joint ventures. Nevertheless, the most dominant form of FDI is via cross-border acquisition activities, which have been, to an extent, extreme both in the US and UK. For example, in the US, on average over the 1984-1995 period, cross-border acquisitions accounted for over 90% of US FDI inflows, while in 1998 in the UK,[17] cross-border acquisitions accounted for around 80% of FDI outflows. Moreover, cross-border acquisitions have risen substantially in recent years; Gregory and McCorriston (2001) report that in 1995 the value of acquisition purchases by the UK was almost 30 million dollars, while in 1999 this had risen to 209 million dollars.

Results from prior research are ambiguous. Some studies suggest that returns to cross-border M&As are generally negative, confirming that FDI is inherently risky (Lee and Caves (1998)) while others provide evidence that there is no wealth effect to shareholders. Doukas and Travlos (1988) found by using a US sample that, on average, there is no significant impact on returns of bidding firms. Other US studies focusing on returns to bidders include Fatemi and Furtedo (1998) and Markides and Ittner (1994) who reported

[17] This data comes from World Investment report 2000: Cross-Border Mergers and Acquisitions and Development, UNCTAD (2000).

non-significant positive abnormal returns, and Datta and Puia (1995) who suggested negative abnormal returns for acquirers buying foreign targets. For non-US countries, Kang (1993) concluded that positive abnormal returns to Japanese bidders buying US firms were most probably due to the weakness of the US dollar. In addition, for UK bidders, Eun et al. (1996) obtained considerable negative abnormal returns, while Cakici et al. (1996) found significantly positive abnormal returns around the event date for acquirers whose gains are more likely to be affected by the presence of hostile bidders. Moreover, Gregory and McCorriston (2001) report insignificantly negative returns. Finally, Goergen and Renneboog (2004) provide evidence of higher CARs for UK bidders (1.5%) than the CARs of bidders coming from the Continental Europe (0.9%).

With respect to the method of payment, until very recently, foreign acquisitions by UK companies almost universally involved cash as the targets were frequently unwilling to accept foreign equity (Gaughan (2002)). Therefore, a positive signal from paying with cash might be diminished or non-existent for cross-border transactions. Most studies in the US and the UK document that domestic acquisitions financed by cash exhibit returns not significantly different from zero.[18] The dominance of cash form of financing may also occur due to corporate governance issues. Bidders coming from countries with poor corporate governance are forced to conduct a merger more expensively when they use stock as the medium of exchange rather than cash. However, common sense would indicate the use of equity when the target is assumed to have proprietary information about its value. In this way, acquirers would be able to take the opportunity to make the pay off to the target shareholders contingent on the overall value created by the acquisition

[18] However, Gregory (1997), in a study of UK domestic acquirers for 1984-1992, provides weak evidence that cash acquirers may underperform. He finds that returns are just significantly negative under some benchmarks.

(Hansen, 1987), reducing the cost of adverse selection. Finally, according to Moeller and Schlingemann (2004), cross-border acquisitions often involve fewer private targets.

2.2.6. Multiple Acquirers

Numerous studies -especially recently- have examined the performance of multiple bidders. Asquith, Bruner and Mullins (1983) find that most bidding firms make multiple bids: 45% of their sample made four or more subsequent bids during the period from 1963 to 1979. By analyzing the abnormal returns for successive merger bids (up to four) of 156 firms that initiated merger programmes, they find that bidder returns remain positive at roughly 2.5% through the fourth bid. They also suggest that the market's reaction to mergers may differ at various times in a merger programme.

Schipper and Thompson (1983) examine bidder returns for 55 firms that engaged in acquisition programmes between 1952 and 1968. They report positive abnormal returns of 13% in one year up to and including the announcement of the acquisition programme. However, they find little stock price reaction[19] to subsequent acquisition announcements[20] because, as they argue, most of the benefits of a merger programme are capitalized at or before the announcement of the programme (in contrast to Asquith et al., (1983), who find conflicting evidence).

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[19] Stock price reactions reflect both the economic importance of events and the extent to which events are surprises. Economic impact: Capitalized value of future net cash flows resulting from the event's occurrence. Hence, it is the difference between the firm value given that the event occurs now and the firm value given that the event does not and will never occur (NPV of the event). Event announcement: Event occurrence. Announcement resolves uncertainty concerning the event's timing. An effect is the change in firm value attributable to this resolution and uncertainty.

[20] Malatesta and Thompson (1985) use Schipper and Thompson's (1983) data to test a model of stock price reaction to partially anticipated events. They find significant bidder returns at the acquisition announcement even by firms that had previously announced an acquisition programme. They also claim that the investor's lack

Loderer and Martin (1990) use a sample of 1,538 bidders acquiring 5,172 targets from 1966 to 1984 to explore the impact on short-run returns of acquirers. They show that first acquisitions lead to significantly larger announcement returns[21] than other acquisitions and are more positive when they are the only acquisitions in the series than when they are the first of two acquisitions. They conclude that acquisitions are profitable and that partial anticipation causes estimation bias, because frequent acquirers experience a positive revaluation while announcing the first acquisition in a series, and then weaker positive revaluation's when announcing subsequent acquisitions.

Past literature predicted positive relationship between acquisition experience and performance based on: i) acquisitions similar to each other and ii) past acquisition experience is generalized from one organizational acquisition to another.[22] With regards to the above arguments, Haleblian and Finkelstein (1999) posit that the greater the extent to which two targets are from the same industry, the more likelihood the positive outcome. This is because multiple bidders generalise past acquisition knowledge, which is consistent with the findings of Hayward (2002). In addition, a negative relationship might be expected between first and subsequent acquisitions when the programme announcement and the announcement of the acquisition occur together.[23]

Rovit and Lemire (2003) examine the performance of 724 large US companies that made 7,475 acquisitions from 1986 to 2001. They reported that acquirers carrying out more than

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of perfect foresight regarding the timing of acquisitions' attempts and that previous attempts do not convey much information about future attempts.

[21] Rosen (2002) examines a sample of US bidders over a three-year period and finds that the short-run reaction is independent of whether the announcement is the first by a firm in the previous three years, but the first time bidders do better than subsequent ones in the long run.

[22] For example, see Lubatkin (1983).

[23] This is in contrast to the findings of Schipper and Thompson (1983), suggesting that positive abnormal return is associated with the announcement of acquisition programmes.

twenty deals in 15 years outperformed firms that made one to four deals. Furthermore, they suggest that those acquirers that buy in specific parts of the economic cycle (recession, growth, and in between) lag behind constant buyers in performance.

Fuller, Netter and Stegemoller (2002) investigate the short-run returns to 539 acquirers that carry out at least five acquisitions over a three-year period from 1990 to 2000. They find that first bids are associated with significantly positive returns, whereas returns to fifth and higher bids are insignificant and sometimes negative. As they claim, this finding stems from the fact that after making many quick acquisitions,[24] bidders either negotiate less efficiently or create less synergy in later deals. In addition, they find that the shorter the time period surrounding acquisitions, the lower the acquirer's return, which is consistent with their above explanation. Finally, they posit that the method of payment used or the public status of the target firm may actually be key issues in explaining the acquiring firm's performance.

2.3. Data and Methodology

2.3.1. Sample Selection

We identify a sample of successful acquisitions by UK public companies that acquired both domestic and foreign targets, announced between 1 January, 1985 and 6 May, 2004.[25] The sample acquisitions are drawn from the Thomson Financial Securities Data Corporation's (SDC) Mergers and Acquisitions (M&A) Database and the period selected

[24] However, Hayward (2002) argues that very long intervals increase the likelihood that inferences from prior experiences are 'unavailable, inaccessible and unapplicable'.
[25] Fuller et al. (2002) find that the SDC announcement date is within two days of the announcement date found by a search of other sources for each of the 500 mergers they examined.

is driven by the total availability of SDC Database and the definition of multiple bidder we set (acquiring three targets within a three-year period).[26] The following criteria are used in selecting our final sample:

- Acquiring firms are UK firms publicly traded on the London Stock Exchange (LSE) and have five days of return data around the takeover announcement listed on the Datastream Database.
- The acquirer completes bids for three or more targets in any three-year window during the sample period.
- The bidder acquires at least 50% of the target's voting shares as a result of the takeover.
- The target is a public firm, a private firm, or a subsidiary.[27]
- The deal value is one million dollars or more.[28] The definition of value of transaction is the total value of consideration paid by the acquirer, excluding fees and expenses. The dollar value includes the amount paid for all common stock, common stock equivalents, preferred stock, debt, options, assets, warrants, and stake purchases made within six months of the announcement date of the transaction. Transaction values in foreign currencies were converted to sterling using the exchange rate at the end of the announcement month.
- We delete financial and utility firms (following Fama and French (1992)) for both bidders and targets.

[26] SDC is a commercial database that includes information on UK takeover bids since 1980. However, the first multiple bidder appears to do the first bid in 1985.
[27] We examine subsidiary targets, as they are one of the three main categories of the market for corporate control. All subsidiary targets are unlisted companies after checking the Target Public Mid Code from the SDC database.
[28] We employ a one million dollars cut-off point to avoid results being generated by very small deals. Similarly, studies like Fuller, Netter, and Stegemoller (2002), Moeller, Schlingemann, and Stulz (2004) in the US use a cut-off point of one million dollars.

Finally, we exclude from the main analysis clustered acquisitions where the bidder acquires two or more firms within a five-day period, as under such a circumstance we are unable to isolate the bidder's return for a particular target. Therefore, we only include the first of the clustered bids. Eventually, our sample that satisfies all the above restrictions consists of 618 unique bidders acquiring 4,173 targets. As we use Dimson, Nagel and Quigley (2003) UK three-factors to account for UK book-to-market peculiarities, we include in our long run analysis bids carried out between 1985-1998 for three-year analysis (2,607 firms), bids up to 1999 for two-year analysis (2,995 firms), and acquisitions from 1985-2000 (3,383 firms) for one-year analysis respectively.

Similar to Ang and Kohers (2001), we group the method of payment into three categories: (1) cash financing includes transactions made solely in cash, or cash and debt;[29] (2) stock offers are defined as transactions made solely in common stock; and (3) combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC.

2.3.2. Sample Description

We display the summary statistics for the firms making multiple acquisitions and their targets in Table 2.1. In Panels A, B, C, and D we report the annual mean and median bidder and target size for all bids, only public bids, only private bids, and only subsidiary bids, respectively. The mean and median size for each bidder and each target are presented in the year of bid announcement. A particular bidder is represented only once per year, but

[29] We examine a sample of 100 random companies with same average MV to the overall sample and we exclude loan notes from cash payments. Our results are robust to this exclusion. We also investigate whether the cost of

may be represented multiple times over the 20-year period. The acquirer's market capitalization equals the price per share one-month prior to the bid announcement times the number of common shares outstanding. For public targets market, capitalization is defined similarly to the acquirer's one, whereas for private and subsidiary targets, the market capitalization is assumed to be the value of the deal when announced. The final row of each panel represents the mean and median size for each unique bidder and target, counted only once. Hence, for the entire sample in Panel A, the mean (median size) of the bidder is 488.19 million sterling (77.335 million sterling) for 618 unique acquirers, while for 4,173 unique targets the mean (median) size is 37.213 million sterling (6.16 million sterling). Panel A also provides a general trend in M&A activity; after the mid-80s there was a gradual increase in the number of takeovers for public, private and subsidiary targets, dropping slightly by 2000.[30]

In Panels B, C, and D we provide the mean and median size based on the distinction of whether the target is public (Panel B), private (Panel C), or a subsidiary of a public firm (Panel D). In sum, Panel B provides that the mean (median) size is 159.058 million sterling (42.33 million sterling) for 195 unique public targets. Panel C shows that the private target mean (median) size is much smaller than for public targets (15.807 million sterling (4.75 million sterling) for 2,459 unique private targets). Panel D reports that the 1,519 unique subsidiary targets are also smaller than public targets (mean (median) size of 56.23 million sterling (8.7 million sterling)).

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debt contaminates the results we get on cash payments and we find that it has no effect enhancing the validity of our results.

[30] Despite the decrease in number of deals after 2000 the total value of transactions has significantly increased. As an indication of the latest data evidence, the total value of takeovers in the first quarter of 2004 is almost double than that of the first quarter of 2003.

2.3.3. Methodologies

2.3.3.1. Short-Run Event Study

Event studies, introduced by Fama et al. (1969), produce useful evidence on how stock prices respond to information. Many studies focus on returns in a short window (a few days) around a dated event. An advantage of this approach is that because daily expected returns are close to zero, the results are typically insensitive to the model chosen for expected returns and therefore the model does not have a big effect on inferences about abnormal returns. Hence, in the short-run, different event study methodologies provide approximately consistent abnormal returns. Andrade, Mitchell and Stafford (2001) refer to short window event studies as: 'The most statistically reliable evidence on whether mergers create value for shareholders.' Literature also provides evidence that, in the short-run, the choice of benchmark used is not important (in contrast to long-run studies) for the measurement of abnormal returns.

Event study analysis provides a direct measure of value created for investors and a forward-looking measure of value creation. In theory, stock prices are the present value of expected future cash flows. However, this requires significant assumptions[31] about the functioning of stock markets: efficiency, rationality, and absence of restrictions on arbitrage. Research suggests that for most stocks these are not unreasonable assumptions, on average and over time.

[31] The basic assumption in studies that focus on short return windows is that any lag in the response of prices to an event is short-lived.

A substantial amount of evidence can be assembled to support the market efficiency argument. If markets were not efficient they would adjust slowly (or not at all) to new information. Results from over 100 studies carefully documented by Elton and Gruber (1987) show that the market responds rapidly to new information. In fact, the typical result in event studies using daily data (as we do) is that, on average, stock prices seem to adjust within a day to event announcements. As Jensen (1988) notes, 'although the evidence is not literally 100 percent in support of the efficient market hypothesis, no proposition in any of the sciences is better documented.' Thus, there is ample evidence for the market efficiency assumption underlying event study methodology.

2.3.3.1.1. Our Approach

For the purpose of our study, we follow the standard event study employed by Fuller et al. (2002) and Dong, Hirshleifer, Richardson and Teoh, (2005) to calculate Cumulative Average Returns (CARs) for the five-day period [-2, +2] around the announcement date as supplied by SDC. We estimate the abnormal returns by using a modified market-adjusted model:

$$AR_{it} = R_{it} - R_{mt}$$

where,

R_{it} is the Return on firm i and

R_{mt} is the Value Weighed Market Index Return (FT-All Share)

Briefly analyzing our approach, the model used provides that the residual represents the abnormal return, which is part of the return that is not predicted, and it is therefore an estimate of the change in firm value on that day, which is caused by the event. Then, we

cumulate the average returns for each firm over the five-day period to produce the Cumulative Abnormal Return CAR, where

$$CAR_{it} = \sum_{t=-2}^{2} AR_{it}$$

The final step is to average the CAR in order to get the Cumulative Average Residual or Return, which represents the average total effect of the event across all firms over a specified time interval (five days in our circumstance).

The market adjusted return method can be thought of as an approximation to the market model where $\alpha_i = 0$ and $\beta_i = 1$ for all firms. Because α_i is usually small and the average β_i over all firms is 1, this approximation usually produces acceptable results.

We do not estimate market parameters based on a time period before each bid since, for frequent acquirers, there is a high probability that previous takeover attempts would be included in the estimation period, hence making beta estimations less meaningful. Additionally, it has been shown that for short window event studies, weighting the market return by the firm's beta does not significantly improve estimation (Brown and Warner (1980)).

2.3.3.1.2. Conventional Parametric Student t-test

The t-statistics are estimated using the cross-sectional variation of abnormal returns. More specifically, the test statistic of the null hypothesis that the mean CARs is equal to zero for a sample of n firms is as follows:

$$t_{CAR} = CAR_{it} \Big/ \left(\sigma(CAR_{it}) \ / \ \sqrt{n}\right)$$

where CAR_{it} is the sample average and $\sigma(CAR_{it})$ is the cross-sectional sample standard deviations of abnormal returns for the sample of n firms.

2.3.3.2. Long-Run Event Study

We are interested in examining the long-run performance of frequent acquirers within a maximum 36-month post-acquisition period. It is obvious that in our analysis a subsequent acquisition will occur within less than 36 months after a previous acquisition, since our sample consists of multiple acquirers. Therefore, for the purpose of our study we use the 'rolling portfolio approach' (or Calendar Time Analysis as it is more commonly known), which sidesteps the problem of cross-sectional dependence of observations.[32] The Calendar Time Approach was originally used by Jaffe (1974) and Mandelker (1974), advocated by Fama (1998), and later applied by Loughran and Ritter (1995), Brav and Gompers (1997) and Mitchell and Stafford (2000). Instead of computing abnormal returns, for example for three years after an event, all firms that have had an event in the last three years are collected into a portfolio. Time series regressions of monthly returns on this portfolio based on factors that determine expected returns are estimated, yielding point estimates of abnormal returns and significance levels. However, Loughran and Ritter (2000) strongly oppose the calendar time approach and argue that it is the least powerful test of market efficiency as it weights each month equally. But usually there will be more events in some months than others due to firms picking periods of misvaluation to announce corporate events such as takeovers. According to Mitchell and Stafford (2000), due to the number of firms being different for each month, heteroscedastic residuals are

likely to be present when regressing calendar time average portfolio returns in excess of the risk free rate against the factors of an asset-pricing model. Hence, when performing our regressions we control for heteroscedasticity using Andrews' (1991) heteroscedasticity and autocorrelation consistent standard errors. The same procedure is followed for the one and two-year period after the event respectively.

2.3.3.2.1. Our Approach

For each calendar month, a portfolio is formed by including all qualifying takeovers during the last three (one and two as well) years. On the first month only takeovers with effective dates on this particular month are included.[33] Each month we rebalance our portfolio to include all acquirers that have just completed an event and to disregard all the ones that have just completed 36 (12 and 24 as well) months in our calendar approach. Equal weighted returns are used to average the performance of individual returns in our sample following the suggestion of Loughran and Ritter (2000), who prove by using simulation and sensitivity analysis that value weighted returns tend to underestimate abnormal returns to managerial choice variables such as takeovers.

Our next step looks at the estimation of the calendar time return by using the well-known, and commonly accepted in the UK, three-factor regression model, as identified by Dimson

[32] Cross-sectional dependence caused by overlapping observations drives standard errors downwards and therefore causes t-statistics to be biased upwards.
[33] Price data for each acquirer are downloaded starting from the effective month of the takeover in each case. Consequently the returns data generated for each acquirer are available from the month following the effective month and for 12, 24 and 36 subsequent months (i.e. t+1..t+12....t+24...t+36). This approach is preferable in our case as we are more interested in whether slow information diffusion generates overpricing and subsequent long-run underperformance.

et al. (2003) to account for the UK B/M ratio peculiarities[34] (originally used by Fama and French (1993)):

$$R_{pt} - R_{ft} = a_i + \beta_i(R_{mt} - R_{ft}) + s_i SMB_t + h_i HML_t + \varepsilon_{it}$$

where R_{pt} is the simple average monthly return on the calendar-time portfolio, R_{ft} is the monthly return on three-month Treasury bills, R_{mt} is the return on a value weighted market index, SMB_t is the zero-cost portfolio capturing the difference in the returns of a value weighted portfolio of small stocks and large stocks, and HML_t is the difference in the returns to a value-weighted portfolio of high book-to-market stocks and low book-to-market stocks. In addition, β_i, s_i and h_i are regression parameters specific to the portfolio and ε_{it} is the error term. The intercept is interpreted as the average of the individual, firm-specific intercepts. A positive (negative) intercept indicates that after controlling for market, size and book-to-market factors in returns, a sample firm has performed better (worse) than expected. The above procedure is repeated three times (for one, two and three years respectively) for all seven portfolios identified.

[34] Dimson et al. (2003) use different breakpoints to those of Fama-French (1993) to construct size and book-to-market portfolios mainly due to size and value being negatively correlated in the UK and large firms (small firms) being concentrated in the low (high) B/M quartile.

2.4. Empirical Evidence

2.4.1. Abnormal Returns by Target Type and Method of Payment

We present (in Tables 2.2, 2.3, 2.4, and 2.5) the five-day cumulative average returns (CARs) to multiple bidders classified by type of target and method of payment. In Table 2.2 (Panel A) we report the CAR for the full sample of bidders, where several patterns are identified. In numbers, for all bids, the CAR is statistically significant and positive (0.74%). However, when we differentiate the returns on the basis of whether the target was public or not, we obtain significantly negative CARs of –1.95% for public targets, but significantly positive CARs for private and subsidiary targets of 0.73% and 1.09% respectively. This is consistent with the UK studies of Firth (1980), Draper and Paudyal (1999, 2004), Sudarsanam, Holl and Salami (1996) and Sudarsanam and Mahate (2003) who find negative and significant bidder abnormal returns surrounding the announcement. We observe that for public targets the CAR is, surprisingly, significantly negative irrespective of the method of payment (cash,[35] stock or combination), while the performance worsens when stock is used as the method of payment (-4.05% relative to -1.16% for cash financing). This is consistent with Myers and Majluf's (1984) hypothesis which suggests that the greater information asymmetry associated with stock payments leads to more negative performance.[36] The negative returns we obtain for cash payment may be due to higher offers (premium) for cash exchanges to compensate target shareholders for the immediate payment of taxes.

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[35] Draper and Paudyal (1999) find insignificant returns for cash payments. They argue that this is consistent with the competitive takeover market hypothesis suggesting that the acquisition of a firm is a zero net present value transaction.

[36] Myers and Majluf (1984) argue that the premise of information asymmetry raises the proposition that managers with private information that their firm's shares are overvalued offer these shares as consideration in takeover bids. Outside investors, recognizing the *adverse selection problem*, consequently revise their estimate of the offer's value downwards, a plausible explanation for the negative performance of stock deals.

If the target is private, overall bidder returns are significantly positive, insignificant if the bid is made with stock but positive and significant if the bid is made with cash or combination (0.46% and 1.02% respectively). In addition, the market views acquisitions of subsidiaries positively, regardless of the method of payment: more specifically, we obtain a positive and significant CAR of 0.98% and 1.26% for cash and combination financing respectively. For stock acquisitions insignificant returns are realized. It is interesting that subsidiary targets offer acquiring firms the largest abnormal returns.[37] Another noticeable point is that when comparing the frequency of payment types by listed targets, we find a 'balanced picture', since the frequency of cash deals for listed targets (48%) is almost the same as the frequency of stock and mixed deals (52%). Nevertheless, unlisted targets exhibit substantially lower levels of stock financing (3.5% and 1.8% respectively). Note that private companies are very closely held. Consequently, according to Martin (1996), since stock-financed acquisitions typically reduce the wealth of the acquiring firm's shareholders, the likelihood of acquisitions being financed in this manner should be lower when blockholdings are higher.

In Panels B and C of Table 2.2 we differentiate our results on the basis of whether the acquisition return reflects the first bid or the third and higher bids. We expect that bidder returns on the third and higher bids will contain relatively less information about the bidder than the first bid since the market has learned about the bidder, and correspondingly contain relatively more information about the synergies and division of gains in the deals than earlier bids. Consistent to Asquith et al. (1983), our results suggest that the market reaction to later deals is different than the reaction to the first bid. For public targets, we

[37] Note that more than half the acquisitions are made with cash. Hence, especially when one includes private targets and subsidiaries, the comment of Andrade et al. (2001) that mergers in the last decades are dominated by a friendly stock swap negotiation is not consistent with our data.

find significantly negative abnormal returns (-2.29%) to the first bid, interestingly, for both cash and stock (-2.39% and -2.17% respectively), although the sample sizes are quite small. Similarly, we obtain significantly negative abnormal returns (-1.95%) for the third and higher bids for public targets. Public targets acquired with stock (-5.13%) impressively drive this result. This greater (more than double) negative return for later deals may be due to the dilution of ownership from offers made for large public firms. The CAR for the first bids for private and subsidiary targets is positive and significant (1.12% and 1.46%), regardless of the method of payment. Consistently, returns are also significantly positive for the third and higher bids for private and subsidiary targets. However, the magnitude of the positive reaction is less for the later bids and insignificant for stock financing for both private and subsidiary targets. According to Loderer and Martin (1990), the evidence of higher abnormal returns for first bids is consistent with the notion that acquisitions are beneficial to bidding firms and that partial anticipation makes it more difficult to observe supporting evidence. In addition, Roll (1986) sets the hypothesis that hubris may cause managers to bid too much for acquisition targets and that they may not get to do a sufficient number of acquisitions in their career to fully understand the winner's curse problem. The tendency to overbid should be particularly acute for 'novice' bidders that, according to previous empirical evidence, do not fare badly at all.

We could also interpret these results for later bids for private firms and subsidiaries, as a consequence of the less favourable price that bidders receive when they acquire multiply private firms and subsidiaries in a short period of time. Another possible explanation is

that bidders who proceed to quick (i.e. many in a concentrated period) acquisitions seem to create a relatively small amount of synergies or to negotiate less efficiently.[38]

We test these ideas by examining a sample of clustered bids (two or more bids for private firms made on the same day). The average size of these bids (and the target's relative size compared to the bidder) is essentially the same as in the full sample in Table 2.2. In Table 2.3 we display the five-day CARs for all bids (238 bids) for clustered private targets, which is a significant 1.43%, an insignificant 0.92% for 140 cash bids, an insignificant 0.51% for 14 stock bids, and a significant 2.45% for 84 combination bids. Since these targets are of a similar size to those in the our original sample and there are two or more targets acquired on the same day, these CARs are smaller in magnitude on a per bid basis than if only one private firm was acquired on that day. Therefore, according to Fuller et al. (2002), we can support that bidders do not do as well, per acquisition, either because they pay too much or create less synergy when they buy multiple private firms in a short period of time.

2.4.2. Empirical Evidence on Subsidiary Acquisitions

In Table 2.4 we provide the results of subsidiary acquisitions. According to Fuller et al. (2002), a reason why a firm sells a subsidiary is the gain from increased focus. Therefore, we assume that diversified firms might accept a relatively lower price for an asset sale than a non-diversified firm (a diversification discount). We divide our sample of

[38] Acquisition fieldwork and laboratory experiments show that managers cannot carefully evaluate acquisitions that occur in quick succession (Haunschild et al. (1994)). Managers often experience an adrenaline rush or over-exuberance to acquire (Jemisson and Sitkin (1986)) and hence they ignore inferences from prior acquisitions, particularly if those inferences raise doubts about the merits of the focal acquisition.

subsidiary targets based on whether their selling parent was diversified or not and we find that the returns to acquirers buying subsidiaries from diversified or non-diversified parents are relatively similar for all bids and first bids. First of all, we observe that cash financing is the significantly dominant method of payment in acquisitions of subsidiaries consistent with Faccio and Masulis (2005). Another noticeable result is the very high positive and significant CAR for stock offers to non-diversified firms for all and first bids (9.75% and 13.63% respectively). A possible explanation in the case of non-diversified parents is that targets have sufficient information regarding the fundamental value of bidders' shares and therefore they avoid being 'victims' of overvaluation, or bidders offer stock at a discount price for tax reasons. For third and higher bids, only acquisitions made using cash or combination provide the bidder with significantly positive returns. However, stock financing provides insignificant results to diversified bidders for all, first, and third and higher bids respectively, while cash and combination offers exhibit more positive performance for diversified than no-diversified subsidiaries. Therefore, there is weak evidence that diversified parents will sell subsidiaries at a discount relative to non-diversified parents.

2.4.3. Bidders Acquiring Both Public and Private Targets

The above results indicate that the market views bids for private firms and subsidiaries from a different point than those for public firms. As we have already suggested, consistent with Fuller et al. (2002), this is due to either a difference in the synergies between acquisitions of public, private, and subsidiary targets or in the division of gains from the bid. However, one could also argue that these results are due to differences in the characteristics of bidders for public and private targets. Hence, we examine the returns to

acquirers separated by those made bids for only private, only subsidiary, and those acquired both public and non-public targets. Unfortunately for our examination, there is no bidder in our sample that acquired only public targets. This may be due to the fact that bidding firms that are involved in merger programmes are very careful in their first acquisition attempt. A successful completion of an acquisition is a 'necessary prerequisite' for the bidders in order to resolve the uncertainty that exists in the market with regards to the value of their firm (Asquith et al. (1983)). Therefore, it seems plausible that we have no bidder that acquired only public firms within a three-year period, since the acquisition of private targets or subsidiaries would have more possibilities for success, due to their smaller size or if we take notice of the agency problems that exist in public companies. In Table 2.5 we present the returns to bidders that purchased public, private and subsidiary targets and we observe very similar results to those of the main sample in Table 2.2. As in Table 2.2, the average CARs for bidders are significantly negative if the target is a public firm but significantly positive if the target firm is a private firm or a subsidiary. We could argue by saying that it is the characteristics of the target firm and its potential relationship with the bidding firm rather than the bidding firm itself that determines these results.

In Panels B and C of Table 2.5, we examine the returns to multiple acquirers for bids of only private or only subsidiaries in order to confirm the above results. The CARs to a bidder that only acquired private firms (Panel B) are positive and significant (0.99%) similarly to the result we got in Panel A for private acquisitions when the bidder acquires both public and private firms. However, when we partition the sample according to the method of payment we obtain insignificant abnormal returns. The same pattern with Panel A is presented in the CARs of bidders that acquired only subsidiary targets (significant positive 1.35% CAR compared to significant positive 1.07% CAR of Panel A). Due to this

consistency between Panel A and Panels B and C, we suspect that bids for only public firms are likely to exhibit the same picture with those engaged in bids of firms acquiring both public and private firms. The fact that there are no acquisitions made for only public firms enables us to conclude that most acquirers prefer to purchase both public and non-public targets.

In sum, Table 2.5 offers the opportunity to enforce one of our main arguments, which is a positive market reaction to acquisitions of private and subsidiary targets, while negative returns are suspected for acquisitions of public targets. Therefore, whether the market views positively or negatively the same bidder depends on the type of target, even after controlling for the method of payment.

2.4.4. Abnormal Returns by Relative Size and Method of Payment

A very important component affecting bidder returns is the target size. Since private targets are, on average, much smaller than public targets we expect the impact on the bidder of a private acquisition to be smaller than a public acquisition. Therefore, we control for the effect of target size on bidder returns in order to be able to compare in a relatively better manner public and private acquisitions. We use the relative size of target to bidder by defining it as target market value (when the target is public) or the deal value (when the target is a private firm or subsidiary) divided by the bidder market value.

First of all, in Panel A of Table 2.6 for the full sample, we observe that, consistent with the previous empirical evidence,[39] as the target size increases the CAR also increases. In Panel B, for public targets, the larger the targets relative to the bidder, the more negative the acquirer's CAR. Once again, and in contrast to the literature, the negative return is not driven by stock offers to public targets, as we identify negative abnormal returns for cash offers as well. However, for private targets and subsidiaries (Panels C and D) there is a positive relationship between the target's relative size and the acquirer's positive abnormal returns.[40] Interestingly, we observe that, unlike public targets, as the relative size increases, bidders that acquire private targets with stock have, on average, larger CARs than bidders acquiring private targets with cash.[41] This pattern of higher returns on average for stock offers than cash offers does not hold for subsidiary targets except for the larger than 20% relative size level. Finally, in all panels (A, B, C, and D)[42] we observe that for relative size lower than 5% cash is used in greater amount than all the other higher size levels. This occurs because for 5% relative size level most of the larger bidders are included. Larger firms are more diversified and, thus, have proportionally lower expected bankruptcy costs. They also have lower flotation costs and are likely to have better access to debt markets, making debt financing more readily available. Hence, Faccio and Masulis (2005) suggest that cash financing should be more feasible in the case of larger firms. In addition, larger firms prefer to use cash financing in small deals, due to its ease of use, provided they have sufficient unused debt capacity or liquid assets. Further, the use of cash allows the bidder to avoid the significant costs of obtaining shareholder approval of pre-

[39] Asquith et al. (1983) found greater abnormal returns for larger public targets in the 1970s.
[40] Consistently to Ang and Kohers (2001), bidder return results are robust to size differences between private and public target takeovers.
[41] Fuller et al. (2002) identified a similar pattern for a sample of US takeovers.
[42] Percentage of cash of the sample with relative size lower than 5% compared to relative size levels 5%-9.99%, 10%-19.99% and higher or equal than 20%: (Panel A): 66.24%> 54.95%, 53.24%, 44.44%, (Panel B): 72.72%> 60%, 43.47%, 32.5%, (Panel C): 57.6%> 42.53%, 46.36%, 34.54%, (Panel D): 81.12%> 74.39%, 67.24%, 59.27%.

emptive rights exemptions and stock authorizations and the higher regulatory costs of stock offers.

2.4.4.1. Explanations for the Identified Patterns of Acquiring Returns

There are several possible explanations for the deteriorating performance of bidders completing many acquisitions in a short period of time. As already discussed, one possible reason is that they are unable to integrate subsequent acquisitions, due to the short interval among them, and hence each subsequent acquisition results in a worse performance than the previous one.

According to Conn et al. (2004), the Diminishing Returns Hypothesis applies the diminishing efficiency of investment schedule to a firm's acquisition programme. As it suggests, the best opportunities are taken first and therefore the value derived from subsequent takeovers follows a declining performance over time. It does not have to be static, but it does require that the dynamic creation of new investment opportunities does not keep up with the speed of the acquisition programme. It predicts that the longer the gap between subsequent acquisitions, the lower the fall in acquisition performance. [43]

The Hubris Hypothesis takes the view that worsening performance is high owing to less care being taken with the next takeover due to overconfidence drawn from the success of the previous one. This could manifest in several ways: a less careful choice of targets leads to a higher price paid for those targets, or a higher leverage being taken on to pay for subsequent acquisitions. Under this hypothesis, it seems plausible that a decline is much

[43] However, Hayward (2002) suggests a U-shaped relationship between the acquisition performance and the intervals between acquisitions, which means that the performance is worse either when acquisitions occur in quick succession or in very long intervals.

more acute for acquirers whose initial acquisition is successful. Furthermore, the subsequent acquisitions may sometimes tend not only to create less synergy, but could also be of destructive value.

In addition, the Merger Programme Announcement Hypothesis explains the decline by saying that on the announcement of the first acquisition the market both reacts favourably to that event and also that because the first acquisition is part of a merger programme. This leads to the first acquisitions being looked on very favourably. When a second acquisition is announced then there is some announcement gain since it is now a known event, but part of the value was already discounted in the share price. While this theory predicts a zero effect on share returns of later acquisitions, it makes no prediction about a decline in profitability associated with subsequent acquisitions.

The Accounting Manipulation Hypothesis suggests that the market may only initially (short-run) be fooled by the accounting manipulations associated with mergers. In simple words, one accounting explanation for the declining performance is the P/E game that focuses on increasing Earnings Per Share (EPS) through purchases of targets with relatively low P/E ratios (compared to the bidder's P/E). This motive, which has been in fashion lately, has the qualities of being completely irrational, shortsighted and unsustainable.

There are several possible interpretations for the negative performance of large public firms. One could argue that the larger the target is relative to the bidder, the stronger the target's negotiating position and ability to extract more of the gain from the transaction. Or alternatively, bidding firms may find it more difficult to integrate larger public targets into

their business. However, neither of these explanations clarifies the different relationship between the returns to bidders and the relative size of the target for bids for private targets and bids for public targets. Finally, another explanation is that there are fundamental differences in the division of gains and/or synergies between acquisitions involving public and private targets, and these differences are magnified by greater the relative size of the merger. According to Fuller et al. (2002), this may be partially due to a liquidity effect.

Private firms and subsidiaries confront the problem of liquidity, meaning that they cannot be bought and sold as easily as public firms. Therefore, in order to create an attractive image for their company and a plausible incentive as a profitable investment opportunity for potential acquirers, they offer their shares at a discount (liquidity). This strategy of liquidity discount becomes even more essential due to the lack of an auction-like atmosphere within private firms, which is in opposition to the auction-like nature and, obviously, liquidity of public firms, enhanced by the presence of risk arbitrageurs. Risk arbitrageurs are professional investors that take position in both target and bidder stocks to provide liquidity to the market and more specifically to public companies (both bidders and targets).

Takeover bids and substantial acquisition of shares are governed in the UK by the *City Code on Takeovers and Mergers* (the City Code), by non-statutory regulation issued by the *City Panel on Takeovers and Mergers* (The Panel), and by the Rules Governing Substantial Acquisitions of Shares (SARs). The entire structure of the regulation framework of takeovers[44] favours public targets more in the bidding process than a private

[44] The Companies Act (1985) (sections 198 and 199) require that if a holding reaches or exceeds 3% of the company's capital, it must be declared. At the same time, the SARs restrict the speed with which a person may increase his/her holding of shares in a company. Except under specific circumstances, Rule 1 dictates that '*a person may not, in any period of 7 days, acquire shares carrying voting rights in a company, or rights over such*

target. For example, Rule 3 of SARs requires a person to disclose, no later than 12 noon on the business day following the day of the acquisition, the acquisitions and holdings if the holding exceeds 15% or any whole percentage figure after that. These requirements apply to public targets, but not to private or subsidiary targets. In addition, firm takeover defenses apply, in fact, only in the case of public firms which have the 'privilege' to resist any offer, something which sounds very difficult, if not impossible for a private firm that is for sale.[45] One could argue that private firms, due to their concentrated blockholder formation, could very easily reject any takeover offer. However, it has been proved that, in fact, managers of private firms are relatively more open to the idea of selling the company, either for reasons of retirement or ownership of illiquid stock options.[46] As a result, this drives them to lose a large part of their advantage in effective bargaining position, and therefore to sell their companies at a lower value rather than under different circumstances. However, the liquidity effect alone cannot explain why, as the relative size of the merger increases, so does the disparity in returns between cash and stock bids for private targets as shown in Table 2.6 (Panel C).

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shares, representing 10% or more of the voting rights if such acquisition, when aggregated with any shares or rights over shares which he already holds, would carry 15% or more, but less than 30%, of the voting rights of that company'. According to the City Code (Rule 9) as soon as 30% or more of the voting rights are acquired, the person acquiring those shares is required to make a mandatory offer. If the holding is just under 30%, under certain circumstances, the holder may also be required to make a general offer.

[45] Holl and Kyriazis (1997) suggest that high director holdings (existing in the vast majority of private firms) from target are more likely to accept the bid and therefore a discounted price should be expected.

[46] The examples of family firms selling out to conglomerates in the 1960s and of entrepreneurial firms selling out to Cisco and Intel in the 1990s fit nicely with this view.

2.4.5. Abnormal Returns by Domestic/Foreign Targets and Method of Payment

Since the UK is a leading player in international acquisitions, the study of UK acquisitions abroad is an important aspect in determining the overall success of FDI by acquisition.[47] Generally speaking, we would expect a worse performance for the acquisitions of foreign firms. Firms engaging in cross-border M&As are faced with unique risks such as 'liability of foreignness' (Zaheer (1995)) and 'double-layered acculturation' (Barkema et al. (1996)). Differences in national culture, customer preferences, business practices, and institutional forces, such as government regulations, can obstruct firms from fully realizing their strategic objectives. Uncertainty and information asymmetry in foreign markets make it difficult for firms to adjust and learn from both the local market and target firm (Kogut and Singh (1988), Zaheer (1995)). As a consequence, liability of foreignness and double-layered acculturation serve as barriers to learning new knowledge and capabilities in a cross-border M&As.

In Table 2.7 we display the CARs of acquiring firms buying domestic (UK companies) or foreign (non-UK companies) targets. Panel A reports the results for domestic acquisitions, which mirror the previous finding obtained in the full sample of Table 2.2. The CARs for public targets are significantly negative (-4.27%) under stock payment and marginally significant for joined payment. However, CARs are positive and significant for private targets and subsidiaries regardless of the means of payment. For cross-border acquisitions, Panel B virtually reports the same pattern as Panel A although CARs for public targets are not significant. Given that the sample size for public targets is small, it would not be prudent to draw fruitful conclusions from these results. Domestic acquisitions outperform

[47] Healy and Palepu (1993) note that, during the late 1980s, the UK was the lead acquiring nation in international acquisitions accounting for almost 30 per cent of international corporate investments over that period.

on average foreign ones only for private targets, possibly due to more imperfect information in non-domestic deals. The larger on average profits for stock versus cash payments (4.80% vs 0.69%) in foreign acquisitions could be explained by the attempt of bidders to offset the greater uncertainty connected with the information problems associated with acquiring abroad. This comes along with the findings of Goergen and Renneboog (2004), who imply that the choice of means of payment does not act as a signal to the market about the over/undervaluation of the bidder's equity. Overall, results reported in Panel A and B confirm to a major extent the return pattern documented in Table 2.2. This empirical evidence is considered critical since one could argue that our results are contaminated by the initial selection of the sample including both domestic and foreign targets. In a nutshell, the general pattern holds even after target origin is taken into consideration.

2.4.6. Abnormal Returns by Diversifying/Non-Diversifying Acquisitions and Method of Payment

Previous empirical evidence suggests that corporate diversification may indeed affect shareholders' wealth. Jensen and Ruback (1983) and Bradley, Desai and Kim (1988) found that the announcement of a diversifying acquisition was generally associated with a small positive impact on the shareholders' performance.[48] However, there is a large body in the literature providing evidence that diversification may diminish shareholders' wealth (e.g. Lang and Stulz (1994), Berger and Ofek (1995) and Servaes, (1996)). Doukas and Kan (2004) argue that bidders who acquire unrelated targets experience greater excess

[48] For more recent evidence of positive abnormal returns from diversifying acquisitions see: Billett and Mauer (2000) and Hadlock, Ryngaert and Thomas (2001).

cash flow declines and valuation discounts than do bidders involved in related acquisitions. In addition, Fuller et al. (2002) examine only the diversification wealth effect of a bidder acquiring a subsidiary target that is core or non-core-related with the bidding company. They argue that the reason why a firm sells a subsidiary is the gain from the increased focus. However, they find weak evidence that diversified firms will sell subsidiaries at a discount relative to non-diversified companies.

Table 2.8 reports the results of bidders acquiring public, private and/or subsidiary targets that are diversified or non-diversified from the bidder's industry. A diversified company is defined as a firm whose three-digit SIC code is different from that of the target firm.[49] Panel A presents, for diversifying acquisitions, a similar finding as the one obtained from the overall sample in Table 2.2. The CARs are positive and significant for the full sample (0.77%) and for private targets and subsidiaries (0.80% and 1.01% respectively), while significantly negative abnormal returns are experienced for public targets (-1.32%). Bidders buying public targets generate significant losses regardless of the method of payment used (cash or stock), while private targets earn significant gains when they purchase by cash. Panel B displays our results for non-diversifying acquisitions, which are relatively similar to Panel A. More specifically, we obtain significantly positive abnormal returns for the overall sample and for private targets and subsidiaries, and negative CARs for public acquisitions. Therefore, as a whole, we conclude that our findings are robust even after cross-industry effect is taken into consideration.

[49] Servaes (1996) points out that a straightforward examination of the four-digit SIC codes of the segments of the firm does not necessarily reveal the degree of diversification of the firm. He argues that the use of the 4-digit SIC code would be too wide to identify the industrial structure of the firm. Similarly, Kahle and Walkling

2.4.7. Abnormal Returns by Book-to-Market Ratio and Method of Payment

In Table 2.9 we examine the announcement returns of glamour versus value bidders to confirm our initial hypothesis that the research design we follow (selection of a sample containing bidders that acquired three firms within three years) allows us to control for much of the information about the bidders' characteristics contained in the returns at the announcement of the takeover. In addition, of course, we seek to identify whether the return patterns obtained in Table 2.2 stand when we control for book-to-market ratio. We define value acquirers as those with high B/M ratio (high-growth opportunities), while glamour acquirers are the bidders with low B/M ratio (low-growth opportunities).

For the overall sample (Panel A), consistent with Rau and Vermaelen (1998), we document that glamour acquirers significantly outperform value acquirers on average (0.87% versus 0.75%). While the past performance of bidding firms may affect their share price behaviour in the long-run,[50] it seems that the market fails to initially (short-run) understand that past managerial performance is not necessarily a good indicator -at least in the case of acquisitions- of future performance. The same pattern is followed for private targets and subsidiaries (Panel C, D). For public targets (Panel B) we report, consistent to Sudarsanam and Mahate (2003),[51] an inverse relationship, since glamour bidders significantly underperform on average value bidders irrespective of the method of payment (only for cash payment both value and glamour bidders exhibit insignificant return). Results that are worth a comment are the significantly high returns of glamour acquirers that select stock as method of payment (10.85%) and the fact that (apart from

(1996) demonstrate how a four-digit SIC code firm assigned to a firm might be misleading with regard to the most reasonable two- or three-digit classifications.

[50] Rau and Vermaelen (1998), by using a sample of US takeovers suggest that low B/M 'glamour acquirers' perform much worse than value firms.

[51] Sudarsanam and Mahate (2003) use a sample of UK public acquisitions.

subsidiaries) low B/M glamour acquirers exhibit better performance on average for cash offers.

In sum, our findings are robust for all book-to-market groups of acquirers, enhancing the full sample evidence (Table 2.2). In addition, we can conclude that announcement market returns are not affected by bidders' characteristics. Independently of the explanation given for the above results (our sample selection or the nature of the market itself), they indicate the robustness of our study.

2.4.8. Regression Analysis

So far, we have analyzed returns to acquirers on a univariate basis. In this section, we examine the interaction of various determinants on the acquirer's returns by performing multivariate tests. In Table 2.4.10, we display the outcomes of regressing the bidder's CARs on factors that may impact its returns. As with all regressions that explain returns to acquiring firms, results may not exhibit quite sufficient explanations, due to the low explanatory power of the regression (R^2). As we have shown above, our results suggest that there are fundamental differences between public, private, and subsidiary targets. Consequently, we regress CARs on factors that determine the performance of bidders for each group separately. However, we should note at this point that there is an overlapping effect between the bidders in the three regressions, since bidders were involved in all three types of acquisitions (public, private, subsidiary targets).

The estimation of bidder returns is conducted on the basis of several bid characteristics, such as whether the target is acquired with stock or with a combination of cash and stock. We also include the log of the relative size of the target to the bidder, the log of the

target's size, and dummy variables to indicate if the target and the bidder belong to the same industry, if the bid is the first bid or if the bid is a third or higher bid. In addition, other variables include interaction variables between the method of payment (cash, stock and combination of cash and stock) and the relative size of the target, and if the target is foreign or if the subsidiary is from a diversified firm.[52]

We incorporate these specific explanatory variables into our model due to the literature, suggesting that they are determinants of the market's perception of an acquisition. For example, we have already provided evidence that the larger the target compared to the bidder, the greater the abnormal returns that the bidder enjoys. Interaction variables between the method of payment used and the relative size are included to capture the interaction that may exist between the relative magnitude of the acquisition and any news conveyed by the choice of the bidder's method of payment. We also use dummy variables for whether a bid was a first bid or a third and higher bids to confirm the results we obtained from the univariate analysis. Bidder returns in later acquisitions may contain relatively less information about the bidder than the first deal, since we assume that the market has learned about the bidder, and correspondingly contain relatively more information about the synergies and division of gains in the deal than in earlier acquisitions. The foreign dummy accounts for the potential that bids for non-UK targets are different than bids for UK firms. Finally, we examine whether industry effect (bidder and target belong in the same industry) may account for the bidder's return.

Generally speaking, we achieve similar results to what we have found by using a univariate analysis. For subsidiary targets, the coefficient on the interaction between stock

and relative size is positive and significant. This suggests that, similar to the univariate results, the larger the relative size of the target for private firms, the greater the positive abnormal returns to the bidder who makes a stock offer. The coefficient on the relative size is also positive and significant. This indicates that as the size of the target to the bidder increases, the bidder's CARs are also affected. In addition, we confirm the interesting result of significantly positive CARs for acquisitions of foreign targets as we have found in univariate regressions. This result provides evidence that UK public firms exhibit positive share price performance after acquiring foreign subsidiaries. Finally, the variables appear to have joint significance, as the F-statistic is positive and significant.

There are fewer variables that have significant coefficients in the sample of acquisitions of public or private firms. For public firms, we notice that they experience significantly negative CARs when they acquire a target within the same industry. This may be due to the fact that, in the case of share exchange, a target's firm managers have sufficient information about the fundamental value of the bidder's shares and do not accept overvalued shares or, in the case of cash exchange, their bargaining power is better than, for example, private firm's managers, and therefore require a higher premium from the bidder. All other variables are insignificant. Finally, for private firms the relative size of the target to bidder is positive and significant. This result can be explained by the fact that the market views larger deals even more favourably. Similarly here, all other variables are insignificant.

[52] The interaction variables may cause multicollinearity so we run 3 regressions excluding these variables. Our results remained similar to the results we got with interaction variables included in the regressions.

2.4.9. Post-event Stock Price Performance

Up to this point, we have assumed that the market incorporates information in stock prices efficiently, so that the announcement return is an unbiased estimate of the impact of an acquisition on wealth of the acquiring firm shareholders. Our aim is to obtain a more spherical and complete view concerning the profits that acquiring firms experience when they proceed to a takeover of a target. This can only be achieved if we examine the abnormal returns both in the short-run and long-run. Such a process seems necessary insofar as one could argue that the returns we report for the five-day interval may easily represent market inefficiency, and therefore the wealth gains observed for private targets and subsidiaries are actually equivalent to market mispricing. So far, we have shown that in the short-run (five-day window) bids for private targets and subsidiaries lead to larger on average returns than bids for public targets. In order to be confident to accept short-run conclusions and reach a relatively thorough investigation of shareholders' wealth effects, we examine the long-run performance of bidding firms over one, two and three years after the acquisition event respectively.

Although the issue is clearly unsettled, the long-run underperformance gains a support from the bulk body in the literature. The literature provides evidence that long-run event studies exhibit some problems in the calculation of accurate abnormal returns.[53] First of all, the methodological problem associated with long-run event studies arises, such as the bad model problem (CAR/BHAR) and biases[54] in calculating long-run abnormal stock returns (i.e. the new listing bias, the rebalancing bias, the skewness bias, and the cross-sectional correlations) which lead to biased test statistics and obviously flawed long-

[53] In Chapter 3 (Section 3.4.2) we present analytically the problems and biases concerning long-term event study methodologies.

horizon test results. Secondly, the benchmark against which we calculate our abnormal returns is usually a controversial issue, as in the long-run studies the use of a different benchmark leads to controversial results. Further, on a more general framework, Viswanathan and Wei (2004) provide a mathematical proof that the usual abnormal return (CAR/BHAR) calculated in event studies has a negative expectation. They prove that, in any finite sample, the expected event abnormal returns will invariably be negative and become even more negative as the event window is lengthened. Apart from the methodological errors discussed above, an alternative explanation for the long-run underperformance is that returns represent a delayed market reaction to overpriced acquisitions. In other words, an acquiring firm might have overvalued and paid too much premium to the target, and this leads to a delayed price correction in their post-acquisition period. Finally, previous studies have consistently found that acquiring firms' shareholder returns are a 'method of payment' dependent. Almost all studies have reported that cash financed bidding firms consistently outperform their equity-financed counterparts.[55]

2.4.9.1. Empirical Results

OLS estimates of monthly average, abnormal returns (AARs) in excess of the Fama and French (FF) three-factor model for one-year calendar time portfolios formed on the basis of target public status are displayed in Panel A of Table 2.11. Jensen's alpha that measures the degree of mispricing, assuming that the model may accurately capture abnormal returns, is negative (-0.70%) and significant for the first portfolio comprising of all 3383

[54] See, for example, Barber and Lyon (1997) and Kothari and Warner (1997).
[55] See, for example, Travlos (1987), Huang and Walking (1987), Amihud, Lev, and Travlos (1990), and Loughran and Vijh (1997).

acquisitions.[56] Both the market factor (Rm-Rf) and the size factor (SMB) are significant, while the coefficient of determination appears to explain sufficiently the variation in excess returns (R^2=84.11%). Finally, the B/M factor (HML) is smaller in magnitude (as in all our portfolios) than the size factor (SMB). This is consistent with the literature, which suggests that size effect is most pronounced in the UK.

Subsequently, this 'All-Acquisitions' portfolio is divided into the 'Public', 'Private' and 'Subsidiary' groups, according to the target public status. We find that acquisitions of public firms exhibit negative and statistically significant monthly abnormal returns (-1.50%). This evidence is consistent with the literature that suggests underperformance of bidding firms involved in public acquisitions in the long run. Complementary details are that all three factors are individually and jointly significant and R^2 is 55.20%. Accordingly, proceeding to the analysis of private and subsidiary groups, our findings indicate that private firms and subsidiaries follow the short-run pattern, meaning that they have better performance on average than public firms (in this case less loss). In numbers, both groups have negative (-0.55% and -0.70% respectively) and significant monthly AARs, while only HMB (the B/M factor) is insignificant in both groups. Note that we provide results of monthly abnormal returns and the differentiation of approximately 1% on average between public and private targets is of great magnitude to enhance our

[56] For US empirical evidence on acquirers' long run stock returns, see for example: Asquith (1983), Malatesta (1983), Jensen and Ruback (1983), Magenheim and Mueller (1988), Agrawal, Jaffe, and Mandelker (1992), Loderer and Martin (1992), Loughran and Vijh (1997), Rau and Vermaelen (1998), Agrawal and Jaffe (2000), and Megginson, Morgan, and Nail (2004). For evidence from the UK, see for example: Firth (1980), Franks and Harris (1989), Kennedy and Limnack (1996), and Gregory (1997). There are, however, other studies (e.g. Bradley and Jarrell (1988), and Franks, Harris and Titman (1991)) that do not find significant underperformance in the three years following the merger. We are aware of very few papers examining post-acquisition performance of privately held and subsidiary firms. Moeller, Schlingemann and Stulz (2004) find insignificantly positive three-year post-acquisition abnormal returns for private targets and zero abnormal returns for subsidiary targets.

conclusion that bidders experience on average less profit when acquiring public targets.[57] The better performance of private firms on average could be explained by the monitoring hypothesis, which suggests that the private firm's blockholders become effective monitors of the bidder's management. Jensen (1991) argues that active investors provide benefits because of their incentive to undertake costly monitoring. Blockholders of private firms are examples of potentially active investors. In addition, we should not be surprised by the fact that subsidiaries perform worse on average than private targets if we bear in mind that, although they are unlisted, public firms mainly still own them and therefore their share price performance might be infected.

We then differentiate our results on the basis of the method of payment used during the merger (Panel B). Consistent with the literature[58] on long-run event studies, we observe the worst performance when the stock method of payment is used. In numbers we obtain significantly negative AARs of -1.73% for stock exchanges. Correspondingly, the consistency of the above results to the five-day CARs' findings appears once again, since, surprisingly, we also obtain significantly negative abnormal returns for cash exchange (-0.74%). Finally, a combination of cash and stock as means of payment exhibits significantly negative returns as well (-0.49%).

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[57] Bruner (2001) suggests: 'Statistical significance is not the same as economic materiality. To say that M&A transactions create or destroy value on average, one needs not only the proof of significance (i.e. that the result is not due to chance) but also materiality, that the wealth effect is something that shareholders or society should worry about. Many of the significant abnormal returns reported in event studies are as low as one or two percent –one might ask whether this is enough to care about? The answer is emphatically 'yes'. Abnormal returns of this magnitude in a short period of time are enough to cause concern or elation among institutions or other sophisticated investors whose performance in turn can be greatly affected by these kinds of events. One also needs to compare apples to apples: the M&A event returns must be annualized to compare them to other rates of returns that investors experience'.

[58] See, for example, Loughran and Vijh (1997).

Further, we follow the same procedure to identify the performance of bidders two years (24 months) after the acquisition. In Panel A of Table 2.12 we present the AARs of the overall portfolio, including all 2,995 takeovers, as well as the AARs dependent on the public status of target. Similarly to a one-year calendar time analysis, we also find that α is negative (-0.86%) and statistically significant for the first portfolio consisting of all acquisitions up to 1999. In addition, all three factors are significant and the coefficient of determination R^2 equals to 82.36%.

After observing the overall picture of our sample, we provide the results of the three subgroups in order to examine if different public status leads to differing performance. We identify that bidders acquiring public firms experience economically and statistically significant negative monthly AARs (-1.60%). A similar pattern to the results obtained for the one-year analysis is observed when examining acquisitions of private targets and subsidiaries, since both groups of private targets and subsidiaries exhibit better performance than public firms but significantly negative AARs (-0.72% and -0.80% respectively). Once again our model seems reliable, as all three factors, Rm-Rf, SMB and HML, for private and subsidiary targets are significant at the 5% level.

Proceeding with the examination of the two-year long-run performance with regards to the method of payment (Panel B of Table 11), we find that the stock form of financing remains the worst concerning to the returns that bidders experience on average in the long run. In numbers, we obtain -1.51% AARs when stock is used as method of payment, while -0.79% and -1.07% AARs are estimated for cash and combination of cash and stock, respectively. Once again, interestingly, all three factors Rm-Rf, SMB and HML, are jointly significant at the 5% level.

Finally, we examine the three-year long run performance of bidding firms, which is (together with five) the most commonly used period for long-run analysis. The identification of the acquirer return patterns over such a long period of time provides a better and more spherical understanding of bidders' earnings when engaging in merger actions. In numbers, the results we obtain for one and two-year analyses are pronouncedly confirmed in the three-year analysis. Monthly AARs in excess of the Fama and French (FF) three-factor model for three-year calendar time portfolios formed on the basis of target public status are displayed in Panel A of Table 2.13. Jensen's alpha is negative (-0.94%) and statistically significant for the first portfolio comprising of all 2,607 takeovers from 1983-1998. All three factors (Rm-Rf, SMB, HML) are statistically significant, while the coefficient of determination R^2 equals to the standard (according to one and two years' results) value of 81.53%. Following the usual procedure, we split our overall portfolio into the 'Public', 'Private' and 'Subsidiary' groups and we obtain significantly negative AARs (-1.35%) for public targets as well as private firms and subsidiaries (-0.84% and -0.88% respectively). Approving the reliability of our model, all 3 factors (Rm-Rf, SMB and HML) for subsidiary targets are significant at the 1% level.

In addition, we control for the effect of the method of payment in the long-run performance of bidding firms (Panel B of Table 2.11). We find that, consistent with the vast majority of the literature, acquirers buying by stock exhibit significantly negative monthly AARs (-1.49%), while cash or combination of cash and stock exchanges experience insignificantly negative AARs. All these results, specifically for the three-year period after the event, obtain more weight, as our initial purpose was to fulfil our performance analysis by examining the most commonly applied long-run interval.

We subsequently conduct a robustness test to further evaluate the above evidence. Multiple acquirers were initially defined as bidders that acquire three or more public and/or private targets and/or subsidiaries within a three-year period. Therefore, one could argue that, for example, inter-effects sourcing from the same bidder acquiring both public and private or subsidiary targets may determine a 36-month return series. In other words, the results we obtain for private targets or subsidiaries may be driven by the existence of bidder returns from public acquisitions. In order to control from the effect of public targets, we isolate a sample of acquirers who bought 'Only Private' or 'Only Subsidiary' targets and examine their long-run performance. Table 2.14 reports the one to three-year post-acquisition monthly average abnormal returns for only private and only subsidiary subgroups. For only private, one to three-year monthly abnormal returns are negative and statistically significant at the 1% level though for stock payments are in general insignificant. For only subsidiaries, one to three-year monthly abnormal returns are negative but statistically insignificant except when stock is used as the payment method. However, given the small sample size for only subsidiaries, we are not able to establish valuable inferences from this evidence. As a whole, it is indicated that even for the only private and subsidiary groups, abnormal returns are negative and mostly significant. This evidence further confirms the findings reported in Tables 2.11, 2.12 and 2.13.

2.4.9.2. Price Reversals

Finally, we examine whether our results are just a manifestation of long-term reversals as suggested by Jegadeesh and Titman (1993). In particular, our finding that acquirers buying private targets and/or subsidiaries earn positive abnormal returns surrounding the announcement date but lose in the long-run can be attributed to short-run persistence followed by long-term reversals. If the firms involved in private or subsidiary acquisitions

experienced positive returns in the few months prior to the acquisition announcement, then the stock prices of these acquirers may be subject to a brief persistence followed by long-term reversals.

Firstly, the pre-event (pre-announcement) performance of each bidder acquiring private targets and/or subsidiaries is measured. Specifically, for each acquirer, we calculate average returns for the six months preceding the announcement of the acquisition. Acquisitions of private and subsidiary firms are ranked according to their pre-event returns and placed into quintiles. Subsequently we focus on acquisitions of private/subsidiary targets that lie in the top and bottom quintiles of pre-event monthly average returns. As a result we sort our sample into four categories: i) privately-held acquisitions that experienced the highest pre-event returns; ii) privately-held acquisitions that exhibited the lowest pre-event returns; iii) acquisitions of subsidiary targets that generated the highest pre-event returns; and iv) acquisitions of subsidiary targets that exhibited the lowest pre-event returns.

The results for this analysis are displayed in Table 2.15. We observe that acquirers of private targets who gained high pre-event returns (5.24% on average) have significant one-year post-announcement monthly average abnormal returns of -0.47%. Similar results are obtained for two- and three-year analysis respectively. This finding is consistent with long-term reversal and it is not possible to determine whether the long-term abnormal performance is solely due to reversals or whether the quality of the acquisition is a contributing factor. Noticeably, however, acquirers of private targets who experienced negative pre-event returns (-1.83%) also do poorly in the long run (-1.06%). The negative average abnormal returns cannot be attributed to long-term reversals of stock returns since

the acquirers had negative returns prior to the merger announcement. Moreover, bidders of subsidiary targets who earned negative pre-event returns have one-year average abnormal returns of -1.13%. This finding also cannot be attributed to price reversals. As a consequence, we suggest that our results are not simply a manifestation of momentum and therefore they are not just capturing long-run stock price reversals.

2.5. Summary and Conclusions

In spite of over 30 years of active research on mergers and acquisitions, much remains unknown about the acquisition effect on the performance of acquiring firms. This is likely to be due to the high variation appearing during an acquisition announcement as a result of a large amount of information arising about numerous issues of the event. We therefore apply a special research design, recommended by Fuller et al. (2002), to isolate bidder characteristics, and therefore to provide a better insight about the real effect of acquisitions in the bidder's returns. This special approach consists of a sample of bidders that successfully acquired three or more public, private and subsidiary targets using cash and stock within a three-year period between 1985-2004.

Our study is virtually the first that applies this approach to the UK with the most updated data in order to examine how shareholders' returns vary by these characteristics. The number of firms that satisfies the restrictions we set consists of 4173 takeovers, a rather comprehensive sample for the UK. In addition, although most recent studies (Fuller et al. (2002) among them) have focused on the effect of the acquisition around the event date, we it consider more prudent to proceed our research a bit further and examine the performance of acquirers in a long-term horizon as well. Given the fact that short-run

event study results can be driven by market mispricing, we investigate whether five-day conclusions can stand up both in the long-run and, of course, to a UK sample of acquisitions.

We calculate Cumulative Average Residuals (CARs) for the five-day period surrounding the acquisition announcement and estimate the abnormal returns by using a modified market adjusted model (Ri-Rm). In brief, we find negative abnormal returns for bidders purchasing public targets and positive CARs for those buying private firms or subsidiaries. Concerning the method of payment used, we report negative abnormal returns for public acquisitions both for cash and stock form of financing, but positive performance when acquiring private firms or subsidiaries with cash and/or combination of cash and stock.

Furthermore, when we differentiate bidders' returns according to the relative size of the target to the bidder we find that for public targets, the larger the targets relative to the bidder, the more negative the acquirer's CAR. In contrast to the literature, the negative return is not driven by stock offers to public targets, as we identify negative abnormal returns for cash offers as well. However, for both private targets and subsidiaries the return becomes more positive as the target size increases.

Subsequently, due to the leading position of the UK within the international takeover market, we seek to distinguish the multiple bidders' returns with regards to the origin of the target firm (Domestic vs Foreign), as there could be suspicion of result contamination due to inclusion of foreign firms into the sample. We report higher returns for an acquisition involving a foreign target than a domestic firm, while surprisingly the stock form of exchange offers substantial positive abnormal returns to multiple acquirers. In

general, our results mirror the main conclusions drawn for the short-run performance of multiple acquirers. The further division of bidders with respect to their growth opportunities (Glamour vs Value Acquirers) is used to verify that our research design controls for (much of) the information of bidders' characteristics contained around the takeover event. The overall conclusion we draw is that, indeed, announcement market returns are not affected by bidders' characteristics and also return patterns stand when the book-to-market ratio is taken into account.

The next step is to examine the long-run performance of multiple acquirers within a maximum 36-month post-acquisition period (we investigate bidder performance over one, two and three-year horizon). We divide takeover bids in portfolios according to the target public status (public, private, subsidiary) and the method of payment (cash, stock, combination of cash and stock), and we examine the one, two and three-year post-acquisition share price performance of each subgroup by applying the well-known Calendar Time Analysis (CTA). We obtain significantly negative monthly average abnormal returns for bidders acquiring public targets both for stock and cash form of financing and less negative returns on average for private targets and subsidiaries.

In conclusion, our long-run results unambiguously indicate that all frequent acquirers experience wealth losses during the post-event period, irrespective of the type of target acquired. This finding contrasts sharply to the short-run evidence that acquirers gain when buying private and subsidiary targets implying a possible market overreaction at the acquisition announcement. We therefore believe it is premature to accept Fuller et al.'s (2002) conclusion based solely on the short-run findings. In this respect, given the inconsistency between the short- and long-run evidence, we consider that no firm

conclusion can so far be drawn on whether acquiring private and/or subsidiary targets creates real economic gains to shareholders or indeed whether the short-run gains are merely an illusion of market mispricing.

Table 2.1. Mean and Median Size of Acquirers and Targets

This table presents a sample of bidders and targets where the bidders successfully acquired three or more targets within a three-year period from January 1, 1985 to May 6, 2004 (20 years). Targets are comprised of public, private, and subsidiary firms. For each of the following panels, a particular bidder is represented only once per year but may be represented multiple times over the 20-year period. Acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Targets include both foreign and domestic firms. The total row for the number of bidding firms represents the number of unique acquirers throughout the sample period. Panel A contains 618 unique bidders acquiring 4173 targets. Targets in Panel A are public, private and subsidiary firms. Panels B, C, and D represent public, private and subsidiary deals respectively. Panel B represents 148 unique bidders acquiring 195 public targets. Panel C contains 577 unique bidders acquiring 2459 private targets. Panel D includes 512 unique bidders acquiring 1519 subsidiary targets. Numbers are reported in million sterlings.

	Bidder			Target		
Year	Mean	Median	N	Mean	Median	N
			Panel A: All			
1985	269.35	327.23	5	67.73	25.46	5
1986	492.16	200.05	28	41.06	7.5	35
1987	504.47	91.14	85	45.49	8.15	126
1988	411.13	95.72	150	34.53	4.79	278
1989	539.64	110.03	141	30.41	6.75	261
1990	580.75	99.91	117	18.19	5.45	186
1991	670.52	80.45	91	22.45	4.8	135
1992	455.45	99.59	93	15.84	3.35	143
1993	445.77	104.61	104	29.44	4.71	158
1994	419.3	134.36	125	29.96	5.88	192
1995	602.67	118.26	135	30.5	4.68	210
1996	696.44	151.89	154	36.66	6.04	240
1997	658.14	136.77	197	33.4	4.5	352
1998	803.28	150.33	235	35.02	5.7	412
1999	1109.31	202.45	219	54.92	9.18	406
2000	1287.05	227.76	219	41.02	9.45	398
2001	1080.93	217.18	165	36.82	7.6	273
2002	1189.66	287.09	115	88.42	8.1	183
2003	731.86	192.04	74	28.59	9.39	133
2004	689.23	218.2	39	13.077	5	47
Total	488.19	77.34	618	37.213	6.16	4173
			Panel B: Public			
1985	405.64	405.64	2	140.3	140.3	2
1986	-	-	-	-	-	-
1987	994.13	337	12	122.4	89.78	13
1988	777.48	416.46	17	253.6	49.78	18
1989	510.24	141.65	20	71.85	19.1	24
1990	485.27	280.63	7	46.66	8.26	7
1991	2257.73	42.35	8	52.43	13.1	8
1992	371.57	481.8	3	7.59	5.79	3
1993	3803.38	1842.68	4	603.5	126.32	4
1994	921.11	182.99	8	345.19	47.31	8
1995	1058.83	307.07	13	86.61	56.09	13
1996	1558.31	1342.67	4	403.72	144.88	4
1997	442.21	112.48	9	67.85	28.2	9
1998	1551.1	254.68	16	179.83	38.8	16
1999	1385.95	215.63	27	124.76	38.52	28
2000	2222.77	292.9	18	184.67	76.43	18
2001	3232.45	818.91	15	215.4	187.12	15
2002	821.85	535.77	3	90.75	12.4	3
2003	1488.7	1488.7	2	180.83	180.83	2
2004	-	-	-	-	-	-
Total	1256.75	238.28	148	159.058	42.33	195

Table 2.1-*Continued*

	Bidder			Target		
Year	**Mean**	**Median**	**N**	**Mean**	**Median**	**N**
			Panel C: Private			
1985	1.55	1.55	1	0.9	0.9	1
1986	292.95	200.05	22	26.55	6.8	25
1987	223.01	132.96	56	15.9	6	73
1988	324.98	64.4	105	8.57	3.55	178
1989	380	114.23	94	13.45	4.5	139
1990	417.82	95.6	72	8.22	4.19	98
1991	210.66	61.98	47	6.98	3.95	60
1992	423.85	93.76	50	14.05	2.87	69
1993	319.11	94.93	60	11.09	4.41	74
1994	357.47	134.68	82	11.89	5	112
1995	373.71	104.78	87	19.57	3.5	123
1996	426.04	136.96	104	20.75	4.32	148
1997	606.38	99.73	143	11.41	3.55	234
1998	675.73	134.68	154	11.02	4.13	248
1999	939.95	197.85	153	24.7	7.11	234
2000	1182.51	239.05	155	26.42	7.15	247
2001	884.06	211.18	111	16.03	6.22	168
2002	769.79	216.09	79	16.82	6.86	118
2003	428.93	138.23	51	13.92	6.17	77
2004	413.26	191.85	29	9.76	4.91	33
Total	511.1	82.48	577	15.81	4.75	2459
			Panel D: Subsidiary			
1985	266.97	266.97	2	28.59	28.59	2
1986	936.1	234.99	9	77.33	12.49	10
1987	776.88	262.76	35	74.48	11.96	40
1988	611.92	208.67	67	42.8	7.9	82
1989	747.16	189.36	76	44.31	7.54	98
1990	651.81	118.08	61	27.79	6.19	81
1991	360.48	140.54	58	32.72	5.04	67
1992	651.81	117.93	55	17.92	4.64	71
1993	360.48	112.97	65	17.71	5.1	80
1994	456.98	129.87	58	23.05	7.65	72
1995	829.59	158.55	65	38.82	7.02	74
1996	1062.52	266.53	72	46.76	9	88
1997	1049.26	204.15	88	77.76	8.27	109
1998	1052.5	227.9	122	59.59	9.47	148
1999	1504.84	300.41	112	90.45	12.9	144
2000	1859.87	251.78	108	48.71	12.6	133
2001	1319.78	268.82	73	45.87	13.19	90
2002	1761.97	460.61	52	224.58	11.46	62
2003	1458.38	450.59	39	43.87	11.74	54
2004	1263.09	554.94	13	20.91	5.1	14
Total	616.21	112.81	512	56.23	8.7	1519

Table 2.2. Cumulative Abnormal Returns (CARs) of Multiple Acquirers

The table presents the Cumulative Abnormal Returns (CARs) for bidders that acquired three or more public, private and/or subsidiary targets within a three-year period between January 1, 1985 and May 6, 2004. Cumulative abnormal returns are calculated for the five days [-2, +2] around the announcement day (day 0) of a takeover. Abnormal Returns are estimated using a modified market-adjusted model:

$$AR_{it} = R_{it} - R_{mt}$$

where R_{it} is the Return on firm i and R_{mt} is the Value Weighed Market Index Return (FT-All Share). The usual estimation period is eliminated due to the high probability of confounding events for bidders acquiring three or more targets during a three-year period. All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Results in Panel A are comprised of bids for public, private, and subsidiary targets. Panel B and C are subsamples of Panel A; they contain first bids and fifth and higher bids, respectively. The results for each panel are further divided by the method of payment. Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. The number of bids is reported below the mean.

	All	Cash	Stock	Combo
Panel A: All Bids				
All Acquirers	0.74%[a] 4173	0.64 %[a] 2492	0.03% 158	0.98 %[a] 1523
Public Targets	-1.95%[a] 195	-1.16%[c] 93	-4.05 %[a] 45	-1.57%[c] 57
Private Targets	0.73%[a] 2459	0.46 %[a] 1261	0.95% 85	1.02 %[a] 1113
Subsidiary Targets	1.09%[a] 1519	0.98%[a] 1138	3.78% 28	1.26%[a] 353
Panel B: 1st Bids-Within 3-Year Constraint				
All Acquirers	1.09%[a] 1676	0.81 %[a] 1019	2.10% [c] 65	1.45%[a] 592
Public Targets	-2.29%[a] 82	-2.39% [a] 42	-2.17 % [c] 18	-2.19% 22
Private Targets	1.12%[a] 948	3.06 % [b] 485	2.75% [c] 36	1.65 %[a] 427
Subsidiary Targets	1.46%[a] 646	1.35%[a] 492	6.98% [c] 11	1.40%[a] 143

Notation: [a] Denotes significance at 1% level;
[b] Denotes significance at 5% level;
[c] Denotes significance at 10% level.

Table 2.2-*Continued*

	All	Cash	Stock	Combo
		Panel C: 3rd and Higher Bids		
All Acquirers	0.58%[a] 2942	0.47 %[a] 1756	-0.94% 102	0.91 %[a] 1084
Public Targets	-1.95%[a] 139	-1.24% 69	-5.13 %[b] 31	-0.67% 39
Private Targets	0.62%[a] 1737	0.36 %[c] 885	0.31% 54	0.93 %[a] 798
Subsidiary Targets	0.86%[a] 1066	0.74%[a] 802	2.75% 17	1.12%[a] 247

Notation: [a] Denotes significance at 1% level;
[b] Denotes significance at 5% level;
[c] Denotes significance at 10% level.

Table 2.3. Cumulative Abnormal Returns (CARs) of Multiple Acquirers of Clustered Private Bids

The table presents the Cumulative Abnormal Returns (CARs) for bidders that acquired two or more private firms on the same day between January 1, 1985 and May 6, 2004. Cumulative abnormal returns are calculated for the five days [-2, +2] around the announcement day (day 0) of a takeover. Abnormal Returns are estimated using a modified market-adjusted model:

$$AR_{it} = R_{it} - R_{mt}$$

where R_{it} is the Return on firm i and R_{mt} is the Value Weighed Market Index Return (FT-All Share). Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. The number of bids is reported below the mean.

	All	Cash	Stock	Combo
Clustered Private Targets	1.43%[a] 238	0.92 % 140	0.51% 14	2.45 %[a] 84

Notation: [a] Denotes significance at 1% level.

Table 2.4. Cumulative Abnormal Returns (CARs) of Multiple Acquirers of Subsidiaries

This table displays the Cumulative Abnormal Returns of a bidder acquiring a subsidiary from a parent that is diversified, represented on the left side of the table, or non-diversified, represented on the right side of the table. A diversified parent is defined as a parent whose three-digit SIC code is different from that of the subsidiary company. CARs are calculated for the five days [-2, +2] around the announcement (day 0) of a takeover. Abnormal Returns are estimated using a modified market-adjusted model:

$$AR_{it} = R_{it} - R_{mt}$$

where R_{it} is the Return on firm i and R_{mt} is the Value Weighed Market Index Return (FT-All Share). The usual estimation period is eliminated due to the high probability of confounding events for bidders acquiring three or more targets during a three-year period. All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). The results for each panel are further divided by the method of payment. Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. The median is in brackets and the number of bids is reported below the median.

	All	Cash	Stock	Combo
Panel A: Diversified Parent				
All Acquirers	1.01%[a] 1016	0.95%[a] 768	1.39% 20	1.17%[a] 228
1st Bids	1.40%[a] 443	1.37%[a] 339	3.17% 7	1.36%[b] 97
3rd and Higher Bids	0.87%[a] 713	0.79%[a] 539	0.83% 13	1.14%[a] 161
Panel B: Non-Diversified Parent				
All Acquirers	1.27%[a] 503	1.04%[a] 370	9.75%[c] 8	1.44%[b] 125
1st Bids	1.60%[a] 203	1.32%[a] 153	13.63%[c] 4	1.49% 46
3rd and Higher Bids	0.82%[a] 353	0.62%[b] 263	8.98% 4	1.07%[c] 86

Notation: [a] Denotes significance at 1% level;
[b] Denotes significance at 5% level;
[c] Denotes significance at 10% level.

Table 2.5. Cumulative Abnormal Returns (CARs) of Multiple Acquirers by Status of Targets

Cumulative Abnormal Returns calculated for the five days [-2, +2] around the announcement (day 0) of a takeover. Abnormal Returns are estimated using a modified market-adjusted model:

$$AR_{it} = R_{it} - R_{mt}$$

where R_{it} is the Return on firm i and R_{mt} is the Value Weighed Market Index Return (FT-All Share). The usual estimation period is eliminated due to the high probability of confounding events for bidders acquiring three or more targets during a three-year period. All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Results in Panel A are all bids from bidders that acquired both public and private targets. Panel B and C contain bidders acquiring only private firms and bidders acquiring only subsidiary firms, respectively. The results for each panel are further divided by the method of payment. Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. The number of bids is reported below the mean.

	All	Cash	Stock	Combo
Panel A: Firms Acquiring Both Public and Private Targets				
All Acquirers	0.69 %[a] 3690	0.62 %[a] 2248	-0.18% 144	0.92 %[a] 1298
Public Targets	-1.95%[a] 195	-1.16%[c] 93	-4.05 %[a] 45	-1.57%[c] 57
Private Targets	0.68 %[a] 2081	0.42%[a] 1103	0.71% 71	1.00 %[a] 907
Subsidiary Targets	1.07 %[a] 1414	0.98%[a] 1052	3.78 % 28	1.15 %[a] 334
Panel B: Firms Acquiring Only Private Targets				
Bids for Private Targets	0.99 %[b] 378	0.75 % 158	2.15% 14	1.11 % 206
Panel C: Firms Acquiring Only Subsidiary Targets				
Bids for Subsidiary Targets	1.35 %[a] 107	0.96%[c] 87	- -	3.07 %[b] 20

Notation: [a] Denotes significance at 1% level;
[b] Denotes significance at 5% level;
[c] Denotes significance at 10% level.

Table 2.6. Cumulative Abnormal Returns (CARs) of Frequent Acquirers by the Relative Size of the Target

The table presents 5-day [-2, +2] Cumulative Abnormal Returns around the announcement date of a takeover calculated using a modified market-adjusted model:

$$AR_{it} = R_{it} - R_{mt}$$

where R_{it} is the Return on firm i and R_{mt} is the Value Weighed Market Index Return (FT-All Share). All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). The relative size of the target is defined as the target market value (when the firm is public) or the deal value (when the target is private firm or subsidiary) divided by bidder market value. The Acquirer Market Value (MV) is calculated as of the month before the announcement date and is the product of the monthly share price multiplied by the number of ordinary shares in issue on Datastream. Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. Panel A represents all bids while Panels B to D represent public, private, and subsidiary, respectively. The number of bids is reported below the mean.

	All	Cash	Stock	Combo
Panel A: All Bids				
< 5%	0.38%[a] 2397	0.44%[a] 1588	-0.82% 64	0.37% 745
5%-9.99%	1.10%[a] 666	0.85%[a] 366	2.64% 19	1.33%[a] 281
10%-19.99%	0.73%[b] 509	0.70%[c] 271	-1.61% 28	1.09%[b] 210
≥20%	1.75%[a] 603	1.46%[a] 268	1.09% 47	2.14%[a] 288
Panel B: Public				
< 5%	-1.98%[b] 44	-1.97%[b] 32	0.60% 3	-2.87% 9
5%-9.99%	-1.64% 25	-2.76% 15	-1.04% 3	0.50% 7
10%-19.99%	-1.88% 46	-0.05% 20	-4.54 %[c] 16	1.30% 10
≥20%	-2.06 %[b] 80	-0.08% 26	-4.71 %[b] 23	-1.75% 31

[a] Denotes significance at the 1% level;
[b] Denotes significance at the 5% level;
[c] Denotes significance at the 10% level.

Table 2.6-*Continued*

	All	Cash	Stock	Combo
Panel C: Private				
< 5%	0.35%[b] 1500	0.43%[b] 864	-1.01% 50	0.35% 586
5%-9.99%	1.11%[a] 395	0.20% 168	4.24%[c] 12	1.65%[a] 215
10%-19.99%	0.61% 289	0.05% 134	5.09% 8	0.89% 147
≥20%	2.36%[a] 275	1.76%[b] 95	2.64% 15	2.68%[a] 165
Panel D: Subsidiary				
< 5%	0.55%[a] 852	0.55%[a] 692	-0.33% 11	0.61% 149
5%-9.99%	1.37%[a] 246	1.74%[a] 183	0.59% 4	0.26% 59
10%-19.99%	1.63%[a] 173	1.57%[a] 116	-3.30% 4	2.11%[a] 53
≥20%	2.31%[a] 248	1.53%[a] 147	13.35%[b] 9	2.48%[a] 92

[a] Denotes significance at the 1% level;
[b] Denotes significance at the 5% level;
[c] Denotes significance at the 10% level.

Table 2.7. Cumulative Abnormal Returns (CARs) of Frequent Acquirers by the Target Origin (Domestic Vs Foreign)

The table presents 5-day [-2, +2] Cumulative Abnormal Returns of a bidder acquiring a domestic or foreign company around the announcement date of a takeover calculated using a modified market-adjusted model:

$$AR_{it} = R_{it} - R_{mt}$$

where R_{it} is the Return on firm i and R_{mt} is the Value Weighed Market Index Return (FT-All Share). All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). The domestic and foreign targets are defined as UK and non-UK firms respectively. The results for each panel are further divided by the method of payment. Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. Panel A reports the results for domestic targets. Panel B reports the results for foreign targets. The number of bids is reported below the mean

	All	Cash	Stock	Combo
Panel A: Domestic Targets				
All Acquirers	0.62%[a] 2680	0.60%[a] 1492	-1.00% 130	0.85%[a] 1058
Public Targets	-2.24%[a] 157	-1.13% 63	-4.27%[a] 44	-1.84%[c] 50
Private Targets	0.80%[a] 1534	0.52%[b] 696	0.25% 64	1.09%[a] 774
Subsidiary Targets	0.80%[a] 989	0.82%[a] 733	1.89% 22	0.63%[c] 234
Panel B: Foreign Targets				
All Acquirers	0.95%[a] 1495	0.69%[a] 1001	4.80%[b] 28	1.26%[a] 466
Public Targets	-0.75% 38	-1.22% 30	5.69% 1	0.35% 7
Private Targets	0.62%[a] 925	0.39% 565	3.08% 21	0.84%[b] 339
Subsidiary Targets	1.64%[a] 532	1.25%[a] 406	10.68% 6	2.50%[a] 120

[a] Denotes significance at the 1% level;
[b] Denotes significance at the 5% level;
[c] Denotes significance at the 10% level.

Table 2.8. Cumulative Abnormal Returns (CARs) of Frequent Acquirers by Diversifying/Non-Diversifying Acquisitions

This table displays the Cumulative Abnormal Returns of a diversified bidder acquiring a public, private or subsidiary firm, represented in Panel A, or non-diversified, represented in Panel B. A diversified bidder is defined as a firm whose three-digit SIC code is different from that of the target company. CARs are calculated for the five days [-2, +2] around the announcement (day 0) of a takeover. Abnormal Returns are estimated using a modified market-adjusted model:

$$AR_{it} = R_{it} - R_{mt}$$

where R_{it} is the Return on firm i and R_{mt} is the Value Weighed Market Index Return (FT-All Share). All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). The results for each panel are further divided by the method of payment. Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. The number of bids is reported below the mean.

	All	Cash	Stock	Combo
Panel A: Diversifying Acquisitions				
All Acquirers	0.77%[a] 2708	0.68%[a] 1639	0.18% 97	0.99%[a] 972
Public Targets	-1.32%[a] 134	-1.05%[c] 60	-2.07%[c] 29	-1.20% 45
Private Targets	0.80%[a] 1558	0.55%[a] 811	1.04% 48	1.07%[a] 699
Subsidiary Targets	1.01%[a] 1016	0.95%[a] 768	1.39% 20	1.17%[a] 228
Panel B: Non-Diversifying Acquisitions				
All Acquirers	0.67%[a] 1465	0.55%[a] 853	-0.22% 61	0.95%[a] 551
Public Targets	-3.31%[a] 61	-1.36% 33	-7.63%[b] 16	-2.94% 12
Private Targets	0.60%[b] 901	0.29% 450	0.83% 37	0.92%[b] 414
Subsidiary Targets	1.27%[a] 503	1.04%[a] 370	9.75% 8	1.44%[b] 125

[a] Denotes significance at the 1% level;
[b] Denotes significance at the 5% level;
[c] Denotes significance at the 10% level.

Table 2.9. Cumulative Abnormal Returns (CARs) of Frequent Acquirers by their Book-to-Market (B/M) Ratio

The table presents 5-day [-2, +2] Cumulative Abnormal Returns of glamour and value acquirers around the announcement date of a takeover calculated using a modified market-adjusted model:

$$AR_{it} = R_{it} - R_{mt}$$

where R_{it} is the Return on firm i and R_{mt} is the Value Weighed Market Index Return (FT-All Share). All acquirers are UK public firms listed on the London Stock Exchange (LSE). The glamour acquirers are defined as those with low book-to-market ratio, while the value acquirers are defined as those with high book-to-market ratio. The acquirer book-to-market ratio is calculated one month before the acquisition announcement date and is the product of the net book value divided by the Market Value. Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination payment comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. Panel A reports the results for Glamour Acquirers. Panel B represents the results for Value Acquirers. The number of bids is reported below the mean.

	All	Cash	Stock	Combo
Panel A: Low B/M (Glamour Acquirers)				
All Acquirers	0.87%[a] 1913	0.80%[b] 1049	0.40% 71	1.01%[a] 793
Public Targets	-2.75%[a] 80	-1.39% 42	-7.51%[a] 18	-1.34% 20
Private Targets	0.91%[a] 1211	0.92%[a] 561	0.82% 41	0.90%[a] 609
Subsidiary Targets	1.26%[a] 622	0.85%[a] 446	10.85%[b] 12	1.69%[a] 164
Panel B: High B/M (Value Acquirers)				
All Acquirers	0.75%[a] 1913	0.64%[a] 1227	0.06% 65	1.04%[a] 621
Public Targets	-1.44%[b] 97	-1.01% 38	-2.29 %[c] 25	-1.29% 34
Private Targets	0.68%[a] 1028	0.18% 572	1.77% 30	1.28%[a] 426
Subsidiary Targets	1.10%[a] 788	1.16%[a] 617	0.81% 10	0.90%[b] 161

[a] Denotes significance at the 1% level;
[b] Denotes significance at the 5% level;
[c] Denotes significance at the 10% level.

Table 2.10. Ordinary Least Squares (OLS) Regression Analyses of Cumulative Abnormal Returns (CARs) of Frequent Bidders

This table presents Ordinary Least Squares (OLS) regressions of the bidder's five-day cumulative abnormal return on the following variables. The first two dummy variables display whether the target is acquired with stock and whether the target is acquired with a combination of cash and stock. Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. The next dummy variables include whether the bid is the first bid, whether the bid is the third or higher bid, whether the target is foreign, whether the bidder and target are in the same industry, and whether the subsidiary is from diversified parent. A diversified parent is defined as a firm whose three-digit SIC code is different from that of the subsidiary company. The remainders of the variables include the log of the relative size of the target to bidder and the log of target's size. The relative size of the target is defined as the natural log of the target market value (when the firm is public) or the deal value (when the target is private firm or subsidiary) divided by bidder market value as of the month before the announcement date. The Acquirer Market Value (MV) is calculated as of the month before the announcement date and is the product of the monthly share price multiplied by the number of ordinary shares in issue on Datastream. Finally, interaction variables of the relative size with cash, stock or combination are included. P-values are reported in brackets next to the parameter estimates.

Dependent Variables	Public	Private	Subsidiary
Intercept	-0.014	0.005	0.000
	[0.528]	[0.263]	[0.000]
Dummy = 1 If Target is Acquired with Stock	-0.025	0.0008	-0.007
	[0.144]	[0.921]	[0.557]
Dummy = 1 If Target is Acquired with Combination of Cash and Stock	-0.007	0.004	0.001
	[0.586]	[0.230]	[0.773]
Dummy =1 If First Bid	0.007	-0.001	0.005
	[0.735]	[0.807]	[0.289]
Dummy = 1 If Third or Higher Bid	0.005	-0.003	-0.004
	[0.736]	[0.401]	[0.332]
Dummy = 1 If Target is Foreign	0.008	-0.0009	0.012
	[0.581]	[0.764]	[0.000]
Dummy = 1 if Target and Bidder are in Same Industry	-0.019	-0.002	0.006
	[0.089]	[0.426]	[0.175]
Dummy = 1 If Subsidiary is from a Diversified Firm	-	-	0.004
			[0.348]
Log of Relative Size	0.001	0.002	0.004
	[0.834]	[0.067]	[0.000]
Log of Target Size	-0.0003	0.001	-0.0008
	[0.947]	[0.287]	[0.438]
Interaction Variable = Relative Size * Cash	1.19e-005	-6.92e-005	-3.047e-005
	[0.896]	[0.564]	[0.279]
Interaction Variable = Relative Size * Stock	-6.63e-005	0.0002	0.0009
	[0.762]	[0.435]	[0.000]
Interaction Variable = Relative Size * Combo	2.88e-005	-3.047e-005	-6.019e-005
	[0.658]	[0.531]	[0.459]
F-statistic	0.837	1.395	6.579
	[0.603]	[0.168]	[0.000]
N	195	2459	1521
R^2	4.80%	0.62%	5%

Table 2.11. 1-Year Calendar-Time Analysis of Long-Run Excess Returns using Fama-French (1993) 3-Factor Model

This table presents the OLS estimates of abnormal returns to merger portfolios according to the Fama and French 3-factor model. The sample of the overall portfolio consists of 3383 successful takeover bids that took place over the period 1985-2000 as identified from the *Securities Data Corporation's* (SDC) *Global Financing* database. In Panel A, calendar time regressions are performed on the basis of target public status (Public, Private, Subsidiary). In Panel B calendar time abnormal returns are formed according to the method of payment (Cash, Stock, Combination of Cash and Stock). Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. Acquirers enter the portfolio on the effective day of the successful takeover and remain for 12 months. Portfolios are rebalanced each month to include firms that have just completed a takeover. We estimate the calendar-time return under the Fama-French model with the following regression:

$$R_{pt} - R_{ft} = a_i + \beta_i (R_{mt} - R_{ft}) + s_i SMB_t + h_i HML_t + \varepsilon_{it}$$

Where R_{pt} is the simple average monthly return on the calendar-time portfolio, R_{ft} is the monthly return on three-month Treasury bills, R_{mt} is the return on a value weighted market index, SMB_t is the zero-cost portfolio capturing the difference in the returns of a value weighted portfolio of small stocks and large stocks, and HML_t is the difference in the returns to a value-weighted portfolio of high book-to market stocks and low book-to-market stocks. In addition, β_i, s_i and h_i are regression parameters specific to the portfolio and ε_{it} is the error term. The reported intercept is the average of the individual, firm-specific intercepts. The t-statistics are displayed in brackets and are calculated on the basis of Andrews' (1991) heteroscedasticity and autocorrelation consistent standard errors.

	Panel A: All-Target Public Status			
	All	**Public**	**Private**	**Subsidiary**
Intercept	-0.70%[a]	-1.50%[a]	-0.55%[c]	-0.70%[a]
Rm-Rf	1.21577	1.26074	1.30805	1.15053
	[32.2]	[15.4]	[27.8]	[27.6]
SMB	0.676757	0.568478	0.846750	0.563948
	[13.2]	[5.24]	[13.5]	[9.94]
HML	-0.0233365	0.523710	-0.0330353	0.145944
	[-0.341]	[3.58]	[-0.391]	[1.93]
R^2	84.11%	55.20%	82.07%	78.66%
	Panel B: Method of Payment			
	Cash	**Stock**	**Combo**	
Intercept	-0.74%[a]	-1.73%[a]	-0.49%[b]	
Rm-Rf	1.21727	1.43000	1.27974	
	[32.1]	[14.3]	[30.4]	
SMB	0.628010	0.975076	0.812553	
	[12.5]	[7.43]	[14.2]	
HML	0.232269	-0.575192	-0.169572	
	[3.42]	[-3.26]	[-2.23]	
R^2	84.59%	61.27%	83.45%	

Notation: [a] Denotes significance at 1% level;
[b] Denotes significance at 5% level;
[c] Denotes significance at 10% level.

Table 2.12. 2-Year Calendar-Time Analysis of Long-Run Excess Returns using Fama-French (1993) 3-Factor Model

This table presents the OLS estimates of abnormal returns to merger portfolios according to the Fama and French 3-factor model. The sample of the overall portfolio consists of 2995 successful takeover bids that took place over the period 1985-1999 as identified from the *Securities Data Corporation's* (SDC) *Global Financing* database. In Panel A, calendar time regressions are performed on the basis of target public status (Public, Private, Subsidiary). In Panel B calendar time abnormal returns are formed according to the method of payment (Cash, Stock, Combination of Cash and Stock). Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. Acquirers enter the portfolio on the effective day of the successful takeover and remain for 24 months. Portfolios are rebalanced each month to include firms that have just completed a takeover. We estimate the calendar-time return under the Fama-French model as described in Table 2.11. The t-statistics are displayed in brackets and are calculated on the basis of Andrews' (1991) heteroscedasticity and autocorrelation consistent standard errors.

	Panel A: All-Target Public Status			
	All	**Public**	**Private**	**Subsidiary**
Intercept	-0.86%[a]	-1.60 %[a]	-0.72%[a]	-0.80%[a]
Rm-Rf	1.19867	1.26109	1.26848	1.15422
	[30.8]	[23.0]	[28.3]	[26.0]
SMB	0.662988	0.640420	0.799547	0.584375
	[12.5]	[8.77]	[13.4]	[9.67]
HML	0.158360	0.612256	0.192479	0.214544
	[2.24]	[6.22]	[2.39]	[2.66]
R^2	82.36%	73.39%	81.77%	76.47%
	Panel B: Method of Payment			
	Cash		**Stock**	**Combo**
Intercept	-0.79%[a]		-1.51%[b]	-1.07%[a]
Rm-Rf	1.18111		1.54848	1.28000
	[33.0]		[9.51]	[26.2]
SMB	0.596511		1.26246	0.804588
	[12.6]		[5.94]	[12.1]
HML	0.334338		0.164153	-0.0342090
	[5.21]		[0.572]	[-0.387]
R^2	85.11%		38.37%	78.34%

Notation: [a] Denotes significance at 1% level;
[b] Denotes significance at 5% level;
[c] Denotes significance at 10% level.

Table 2.13. 3-Year Calendar-Time Analysis of Long-Run Excess Returns using Fama-French (1993) 3-Factor Model

This table presents the OLS estimates of abnormal returns to merger portfolios according to the Fama and French 3-factor model. The sample of the overall portfolio consists of 2607 successful takeover bids that took place over the period 1985-1998 as identified from the *Securities Data Corporation's* (SDC) *Global Financing* database. In Panel A, calendar time regressions are performed on the basis of target public status (Public, Private, Subsidiary). In Panel B calendar time abnormal returns are formed according to the method of payment (Cash, Stock, Combination of Cash and Stock). Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. Acquirers enter the portfolio on the effective day of the successful takeover and remain for 36 months. Portfolios are rebalanced each month to include firms that have just completed a takeover. We estimate the calendar-time return under the Fama-French model as described in Table 2.11. The t-statistics are displayed in brackets and are calculated on the basis of Andrews' (1991) heteroscedasticity and autocorrelation consistent standard errors.

	Panel A: All-Target Public Status			
	All	**Public**	**Private**	**Subsidiary**
Intercept	-0.94%[a]	-1.35 %[a]	-0.84%[a]	-0.88%[a]
Rm-Rf	1.16160	1.22612	1.23237	1.11206
	[30.2]	[23.7]	[28.2]	[25.9]
SMB	0.618120	0.668703	0.759650	0.521384
	[11.8]	[9.69]	[13.1]	[8.92]
HML	0.261810	0.686589	0.344535	0.272851
	[3.76]	[7.42]	[4.39]	[3.51]
R^2	81.53%	75%	81.27%	76.09%
	Panel B: Method of Payment			
	Cash		**Stock**	**Combo**
Intercept	-0.95%[a]		-1.49%[a]	-1.01%[a]
Rm-Rf	1.18150		1.21126	1.20723
	[31.4]		[19.5]	[28.0]
SMB	0.606309		0.849556	0.714582
	[12.2]		[10.4]	[12.2]
HML	0.368501		0.475471	0.169674
	[5.46]		[4.35]	[2.17]
R^2	83.79%		69.96%	79.59%

Notation: [a] Denotes significance at 1% level;
[b] Denotes significance at 5% level;
[c] Denotes significance at 10% level.

Table 2.14. Calendar-Time Portfolio Regression of Long-Run Stock Returns using Fama-French 3-Factor Model for 'Only Private'-'Only Subsidiary' Targets

This table presents the OLS estimates of abnormal returns to merger portfolios according to the Fama and French 3-factor model. Calendar time regressions are performed on the basis of calendar time regressions are performed on the basis of bidders that acquired 'Only Private' targets or 'Only Subsidiaries'. Results are then further divided by the method of payment (Cash, Stock, Combination of Cash and Stock). Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. Acquirers enter the portfolio on the effective day of the successful takeover and remain for 12, 24 and 36 months respectively. Portfolios are rebalanced each month to include firms that have just completed a takeover. We estimate the calendar-time return under the Fama-French 3-factor model with the following regression:

$$R_{pt} - R_{ft} = a_i + \beta_i (R_{mt} - R_{ft}) + s_i SMB_t + h_i HML_t + \varepsilon_{it}$$

The t-statistics are calculated on the basis of Andrews' (1991) heteroscedasticity and autocorrelation consistent standard errors. The numbers in percentage represent the reported FF α, which is the average of the individual, firm-specific intercepts. The number of firms is reported below the monthly average abnormal returns.

	All	Cash	Stock	Combo
Panel A: 1 Year				
Only Private	-1.53%[a] 313	-0.86%[c] 135	-1.03% 12	-1.32%[b] 166
Only Subsidiary	-0.70% 87	-0.51% 44	-2.09%[b] 24	-0.42% 19
Panel B: 2 Years				
Only Private	-1.43%[a] 268	-0.69% 125	-1.80% 12	-1.52%[a] 131
Only Subsidiary	-0.51% 75	-0.40% 35	-1.24%[c] 23	-0.55% 17
Panel C: 3 Years				
Only Private	-1.48%[a] 234	-1.30%[a] 109	-1.68%[c] 12	-1.44%[a] 113
Only Subsidiary	-0.26% 68	-0.07% 31	-0.02% 21	-1.12% 16

[a] Denotes significance at the 1% level;
[b] Denotes significance at the 5% level;
[c] Denotes significance at the 10% level.

Table 2.15. Calendar-Time Portfolio Regression of Long-Run Stock Returns using Fama-French 3-Factor Model of Acquirers Buying Private Targets and Subsidiaries with the Best and Worst Pre-event Performance

This table presents pre-announcement monthly average returns as well as 1, 2 and 3-year monthly average calendar time abnormal returns of four categories of acquirers. Firstly, acquirers are divided into two groups: acquirers of private and subsidiary targets respectively. These two groups created are further subdivided into four categories: i) Acquirers of private targets who had the highest six-month pre-announcement average returns, ii) Acquirers of private targets who had the lowest six-month pre-announcement average returns, iii) Acquirers of subsidiary targets who had the highest six-month pre-announcement average returns, iv) Acquirers of subsidiary targets who had the lowest six-month pre-announcement average returns. We estimate the calendar-time post-event returns under the Fama-French 3-factor model with the following regression:

$$R_{pt} - R_{ft} = a_i + \beta_i (R_{mt} - R_{ft}) + s_i SMB_t + h_i HML_t + \varepsilon_{it}$$

The t-statistics are calculated on the basis of Andrews' (1991) heteroscedasticity and autocorrelation consistent standard errors. The numbers in percentage represent the reported FF α, which is the average of the individual, firm-specific intercepts. The number of firms is reported in parenthesis.

	Private Targets		Subsidiary Targets	
	Top quintile in terms of pre-event returns	**Bottom quintile in terms of pre-event returns**	**Top quintile in terms of pre-event returns**	**Bottom quintile in terms of pre-event returns**
6-Month Pre-Event	5.24% (959)	-1.83% (959)	4.37% (616)	-1.72% (616)
1-Year Post-Event	-0.47%[b]	-1.06%[a]	-0.41%	-1.13%[a]
6-Month Pre-Event	4.78% (844)	-1.71% (844)	4.20% (552)	-1.57% (552)
2-Year Post-Event	-0.86%[a]	-1.04%[a]	-0.59%[b]	-1.12%[a]
6-Month Pre-Event	4.55% (731)	-1.71% (731)	4.08% (486)	-1.56% (486)
3-Year Post-Event	-1.06%[a]	-0.96%[a]	-0.58%[c]	-1.17%[a]

[a] Denotes significance at the 1% level;
[b] Denotes significance at the 5% level;
[c] Denotes significance at the 10% level.

Chapter 3: Do Stock Prices Drive Performance of Bidding Firms?

3.1. Introduction

In Chapter 2 we documented evidence that bidders enjoy significant announcement profits (i.e. positive abnormal returns) when they acquire subsidiaries and private firms with cash; they exhibit insignificantly positive returns when they acquire private targets with stock; and they generate negative abnormal returns when they buy public firms irrespective of the payment method used (worse on average performance for share exchanges). In addition, when we examined shareholders' wealth effects in the long-run, we found that returns are reversed for any method of payment used and any target acquired. We also showed that acquisitions of listed firms have a worse performance on average than unlisted firms in the long-run. Therefore, our results suggested that bidders (shareholders) should cash out after the announcement to enjoy positive returns, providing also an insight to managers about which specific acquisitions lead on average to a less worse performance for their firm. Finally, taking the above results into consideration, we addressed the question of whether acquiring private and subsidiary firms creates superior value; this remains open for debate and future research.

The purpose of this chapter is, thus, to identify whether other factors, namely market conditions (market valuations or merger waves) affect the performance of bidders and are likely to be significant factors for the results obtained in Chapter 2. Numerous studies provide evidence that mergers occur when the overall stock market is hot. The main hypothesis lying behind the process of an acquisition is the exploitation of synergies that

occur in order to achieve some efficiency that lowers costs.[1] The incentive to cut costs should be strongest during recessions when most firms have excess capacity and there is considerable downward pressure on prices. Yet, the advent of a recession always brings a sharp decline in merger activity. Why are increases in efficiency so attractive when stock prices are rising and so unattractive when they fall?

In general, the literature suggests positive abnormal returns for target shareholders at the acquisition announcement while bidder shareholders' returns depend on various factors shown in Chapter 2, such as method of payment and target ownership status. Recent studies associate M&A activity with stock market performance. Jovanovic and Rousseau (2001) correlate high merger activity with high market valuations, while Shleifer and Vishny (2003) suggest that the impact of market valuation depends on method of payment, the performance of acquirers, and the occurrence of merger waves. Rhodes-Kropf and Viswanathan (2003) develop a model in which firm-specific and market-wide misvaluations can cause merger waves. Finally, Rosen (2005) suggests a merger momentum in prices, providing evidence that acquirer stock prices are more likely to increase when the merger is announced in high valuation markets as compared to low valuation markets (hot versus cold markets). Hence, some other interesting questions arise: Does the overall level of the stock market affect the performance of acquiring firms? Or is merger activity indeed the major deterministic factor? Putting both together, is it the overall level of the stock market that drives acquisitions or can mergers themselves predict ups and downs of the market?

[1] When the market-wide overvaluation is high, the estimation error associated with the synergy is high too, so the offer is more likely to be accepted. Thus, when the market is overvalued the target is more likely to overestimate the synergies because it underestimates the component of misvaluation that it shares with the bidders.

We use a sample of 3,512 domestic acquisitions announced between January 1, 1984 and May 6, 2004, and examine the performance of acquirers both in the short and long run. We classify the market into high, neutral or low valuation periods based on the P/E ratio of the TOTMKUK index. Since we are interested in examining overall market valuations, we use the TOTMKUK P/E ratio as a proxy for market valuation just like investors use a firm's P/E ratio as a measure of firm valuation. Each month is classified as high- (low-) valuation when it lies in the top (bottom) half of the month with P/E ratios above (below) the past five-year average P/E. All other months are classified as neutral. For robustness reasons we also employ the TOTMUK index itself classifying each month into high, low or neutral valuation period following the procedure used for P/E classification. In addition, we examine the performance of acquirers dependent on the level of merger activity, classifying each month as a hot or cold merger month, after ranking each month according to the number of mergers, and identifying whether this month lies in the top or bottom 30% quintile with the largest or smallest number of mergers respectively.

We find that, overall, acquirers exhibit positive abnormal returns for the five-day interval surrounding the acquisition announcements. Consistent with the literature, we find positive and significant CARs for cash acquisitions, while negative abnormal returns are obtained when stock is used in the transaction. When we differentiate our sample on the basis of target type, we find that acquirers gain when buying private firms or subsidiaries, but lose when public targets are purchased. In general, the return pattern is qualitatively the same with the one obtained in Chapter 2 for frequent acquirers. When we partition the sample by the market's valuation at the acquisition announcement, we obtain positive and significant abnormal returns in high-valuation periods, while insignificantly positive CARs are obtained during low-valuations periods. Results are robust when we use either P/E

TOTMKUK index or TOTMKUK index itself to classify market valuation and also when a larger than five-day window is employed (i.e. -20, +20). This suggests that while the market rewards acquisition attempts when stock prices are high, it appears to be indifferent to acquisitions initiated in low-valuation periods. Further, when we examine the performance of bidders taking into account the merger activity, we find that bidder shareholders increase, on average, their wealth more in cold rather than hot merger markets. This implies that in cold merger markets acquirers are more careful in the evaluation of synergies or they negotiate more efficiently. Finally, when we investigate the interrelationships between overall level of stock market valuations and merger activity, we identify that during high valuation periods more positive abnormal returns are enjoyed regardless of the number of mergers taking place, while the inverse relationship does not exist. As a result, we argue that overall level of the stock market drives acquisitions and not merger activity.

Further, we turn our attention to acquirers' long-run performance (12-, 24- and 36- month analysis respectively). We find, consistent with the results we obtained in Chapter 2, that acquirers experience negative and significant abnormal returns. However, we report worse performance on average for acquisitions initiated during high-valuation periods than low-valuation periods. In general, even when we account for the payment method used or target public status, low-valuation acquisitions outperform high-valuation acquisitions on average. This pattern of better performance of low-valuation acquisitions in the long run stands after controlling for the acquirer's market valuation (B/M). These findings indicate that low-valuation acquirers destroy significantly less long-term shareholder wealth on average than high-valuation acquirers. The initial generally positive reaction of the market to high-valuation acquirers reflects that the market learns only gradually that many of the

mergers undertaken during boom periods were imprudent and with less care. In contrast, when stock prices are low, acquisitions earn insignificantly positive announcement returns but, in the long run, these acquisitions exhibit better performance. This suggests that the market learns over time that, despite its initial scepticism, these acquisitions can have better potential. All in all, for both high and low-valuation acquisitions the market reaction at the announcement stands in sharp contrast to the market's long-run view of the firm's performance.

In order to confirm that our results are not just capturing long-run stock price reversals we calculate the pre-event performance of each acquirer in the high and low-valuation period for the six-month period preceding the acquisition announcement. High and low-valuation acquirers are ranked in order of their pre-event monthly average returns and placed into quintiles. We document that high-valuation acquirers who gained high pre-event returns have negative abnormal returns consistent with long-term reversal. However, high-valuation acquirers who experienced negative pre-event returns also do poorly in the long run, suggesting that the negative average abnormal returns cannot be attributed to long-term reversals of stock returns since the acquirers had negative returns prior to the merger announcement. Moreover, low-valuation acquirers who earned positive pre-event returns have positive one-year average abnormal returns. This outperformance also cannot be attributed to price reversals. We therefore suggest that high-valuation acquirers are underperforming relative to low-valuation acquirers in the long run because managers are making poorer acquisition decisions during high-valuation periods.

We further analyze our sample by raising the question why do high-valuation acquirers underperform relative to low-valuation acquirers in the long run? A potential explanation

we provide is that managers might engage into herding behaviour. By this we mean that managers may decide to follow the herd during a merger for personal prestige reasons and because they do not want to be considered out of the "merger game". We report empirical evidence consistent with herding. In particular, early movers, defined as the earliest 10% of all acquisitions announced during a high-valuation wave, have significantly worse performance than late movers (the remaining 90% of high-valuation merger waves), as suggested by the significant difference reported when employing zero investment portfolios.

The rest of the chapter is organized as follows: section 3.2 reviews the related literature; section 3.3 describes the data; section 3.4 discusses the methodologies; section 3.5 presents and analyzes our results. Finally, section 3.6 summarizes the findings and concludes.

3.2. Literature Review

3.2.1. Shareholders' Wealth Effects

A large body in the literature has examined the share price performance of bidding firms at the announcement or in the post-acquisition period. In this section we review various empirical studies with findings on shareholders' wealth effects (value creation or destruction).

3.2.1.1. Short-Run Announcement Returns

In Chapter 2 (section 2.2) we analytically review the literature concerning the short-run performance of acquiring firms. One crucial issue regarding performance studies worth mentioning is that bidder returns are hard to measure for three main reasons: Firstly, targets may be small relative to bidders, so even good acquisitions could have little impact on the bidder's stock price. Secondly, the stock price's reaction to an acquisition can only represent the surprise component of the acquisition. If a bidder is known to be engaging in an acquisition strategy the stock price's reaction to any acquisition announcement will only represent how the market understands that acquisition differs from anticipated acquisitions. Finally, if the target resists the takeover, the takeover process could take a long time. Hence, the uncertain outcome of the event makes it difficult to isolate the market's perception of the bid.

3.2.1.2. Post-Acquisition Performance

A number of alternative explanations have been proposed for the post-merger performance puzzle. One such explanation that warrants further attention is the hot market theory. This theory was first proposed in the context of Initial Public Offering (IPO) market by Ritter (1984) and has recently been formalised by Ljungqvist, Nanda and Singh (2001). Their model of the IPO process attributes the three main empirical anomalies – underpricing, hot issues markets and long run underperformance – to the presence of a class of irrationally exuberant investors. With constraints on short sales, the presence of exuberant investors can result in long-run underperformance of IPOs. However, issuers, timing their IPOs to take advantage of a hot issue market, are less than aggressive about pricing their IPOs.

Their model shows how underpricing can emerge when underwriters attempt to maximise issue proceeds by extracting surplus from exuberant investors.

Various researchers have documented evidence regarding the long-run performance of bidding firms in Mergers and Acquisitions. Due to the widely documented contradictory evidence of these researchers, the long-run performance of bidding firms is inconclusive. This sub-section reviews the literature on the long-run performance of acquirers. It comprises a review of the general trend in post-merger performance of acquirers, while it links long-run studies to method of payment, mode of acquisition, size and book-to-market factors.

3.2.1.2.1. General Trend

In the US, Malatesta (1983), Asquith (1983) and Magenheim and Muller (1988), among others, reported significant negative abnormal returns in the year following the outcome announcement. However, Malatesta (1983) found insignificant negative abnormal returns in the year following the merger announcement for his entire sample, but found significant negative abnormal returns for bidders in mergers occurring after 1970 and for bidders with smaller equity value. By providing a thorough examination of acquirers' post-merger performance, Agrawal et al. (1992) used a nearly exhaustive sample of acquisitions and observe that they suffer a statistically significant loss of about 10% over the five-year post-merger period. They further used an estimation approach that adjusts for shifts in beta over time, which indicate that their results are not due to the mean-reversion. Hence they argued that the negative post-merger returns are not caused by a slow adjustment of the market to the merger event. Andre et al. (2004) studied the long-term performance of 267 Canadian mergers and acquisitions that take place between 1980 and 2000, using different calendar-

time approaches with and without overlapping cases and find that Canadian acquirers significantly underperform over the three-year post-event period.[2]

Despite the widely documented negative post-acquisition performance the evidence is not one-sided. Contrary to the above findings, other researchers including Langetieg (1978) and Franks et al. (1991) did not find significant negative performance over three years after the acquisition. Since they used multi-factor benchmarks, they concluded that previous findings of poor performance after takeover are likely due to benchmark portfolio errors rather than mispricing at the time of the takeover. This seems to imply that the negative post-acquisition performance documented is more a statistical artifact rather than a result of market inefficiency. However, Agrawal et al. (1992) showed that their results are period specific and, hence, cannot be generalised. Consistent with Franks et al. (1991), Loughran and Vijh (1997) reported that the five-year abnormal return for their entire sample is insignificantly different from zero. Loderer and Martin (1992) also reported that the five-year post acquisition performance is positive but insignificantly different from zero.

In the UK, the first major study was undertaken by Firth (1980) when he examined acquisitions over the period 1969-1975. He reported that bidding firms are associated with negative abnormal returns. Consistent with this result, Barnes (1984) examined all mergers undertaken by companies in the London Stock Exchange (LSE) from 1974-1976 and reported substantial and significant price decreases of acquirers in the long term. Furthermore, Franks and Harris (1989) used a comprehensive sample for over a thirty-year period (1955-1985) and found that bidders earn negative post-merger abnormal returns of

-13% two years after the merger. They also observed that when CAPM is used instead of the similar market model used by Firth (1980) a significantly positive abnormal return (about 4%) is gained due to the average bidder's alpha. Limmack (1991) reported that on average over the 24 months after the announcement, the acquirer's shareholders experience significantly negative returns over the whole period. Consistent with all the above UK studies, Gregory (1997) examined domestic takeovers for the period 1984-1992 and found that, irrespective of the benchmark used, the two-year post-acquisition returns is, on average, significantly negative. Hence, he expressed (p. 998) that 'the contribution of this paper has been to show that the post-takeover performance of UK companies is unambiguously negative in the longer term'. However, Limmack (1997, p. 1006) remarked that 'his conclusion is perhaps a little premature' since there remain at least three possible explanations for the results obtained in this and other studies, which are '(i) the market is inefficient and takeovers are not, on average, in bidding shareholders' interest (ii) results are time and sample specific and (iii) the models or methods selected for control may not be appropriate for the purpose and that there are other as yet unspecified but more appropriate control models or methods'.

Contrary to these studies documenting significantly negative abnormal returns but consistent with Franks et al. (1977), Dodds and Quek (1985) studied acquirers over a rather short period, 1974-1976, and found that they earn positive abnormal returns. However, they observed that the positive abnormal returns earned only lasted until the 25th month with negative abnormal returns being earned thereafter.

[2] Results are consistent with the extrapolation and the method of payment hypotheses, that is, glamour acquirers and equity-financed deals underperform.

A very recent UK study by Antoniou, Arbour and Zhao (2005) examined takeovers in the 1990s using the cumulative abnormal return (CAR) and buy-and-hold abnormal return (BHAR) methodologies. They found that over a three-year period acquirers earn a positive but insignificantly different from zero abnormal returns. However, they reported significantly negative one-year CAR and one and two-year BHAR abnormal returns. They repeated the three-year performance examination after eliminating the overlapping acquiring firms but found the results to be of the same pattern even though overlapping stock return inflates the conventional t-test statistic. Hence they conclude that there is no statistically significant three-year post-takeover abnormal return.

3.2.1.2.2. Method of Payment

The method of payment is an imperative characteristic of any M&A activity since in structuring an acquisition the form of payment must be determined. Bidding firms pay the target firm's shareholders using an array of means with the most common being cash, stock, and a combination of both (mixed). According to Fishman ((1989), p 41): 'A key difference between a cash offer and a (risky) securities' offer is that a security's value depends on the profitability of the acquisition, while the value of cash does not'. In a perfect market world of Modigliani and Miller (1958) with certainty, no transaction costs and no-taxes, one would not expect the method of payment to have an effect on shareholder wealth. However, in reality this is not the case.[3] It is widely accepted that the mode of payment provides an important signal about the perceived value of synergy which can hence explain the long-run post-acquisition performance of bidders.[4]

[3] See DeAngelo and Masulis (1980), Fishman (1989) and Myers and Majluf (1984).
[4] See chapter 2 (section 2.2.4) for further implications concerning payment method and bidders' performance.

Martin (1996) and Loughran and Vijh (1997) argue that the form of payment is partly endogenous to the mode of acquisition (mergers/tender offers), which may be the real driving force behind the results (see also Faccio and Masulis (2005)). Loughran and Vijh (1997) find, in contrast to cash exchanges, negative abnormal returns for stock offers. Martin (1996) further reports that while acquiring firm size is not related to the method of payment, both the acquirer's and the target's investment opportunities are determinants of the form of financing. Consistent with the signalling hypothesis, Franks and Harris (1989) observed that in the UK and US larger bid premia are associated with cash than equity and that acquirers making cash offers have better post-merger performance than those using equity. However, they find that unlike the US, UK bidders using all equity do not suffer significant abnormal losses at the time of the bid announcement. Antoniou, Arbour and Zhao (2005), who studied four means of exchange, found that mixed financing offers are the best performing while stock offers are the worst ones even though they did not find any statistically significant post-takeover abnormal returns for all four in three years after the takeover.

Very few studies have examined the long-run performance of privately held firms or subsidiaries. Moeller Schlingemann and Stulz (2004) reported insignificantly positive post-acquisition (significantly positive for large firms, insignificantly negative for small firms) abnormal returns for three years after the announcement, and zero abnormal returns for subsidiary targets. Li (2004) documented that acquirers of private targets significantly underperform three years after their acquisitions, despite a large positive market reaction around the announcement period. The underperformance is only prevalent for stock-financed transactions, most severe for low book-to-market acquirers, and unrelated with the relative size of the transactions.

For mergers of private companies, using stock as medium of payment has further implications due to the particular ownership structure of private companies.[5] The concentrated ownership in private companies makes the creation of large shareholders possible through mergers. If the acquisition is paid with the acquirers' shares, and it creates a large shareholder who can effectively monitor the management's decisions, the acquirers' stock value should not go down afterwards. Similarly, according to the information hypothesis, if the favourable private information of acquiring firms' stocks can be conveyed to the market by the private targets' managers' acceptance of blocks of shares, we will not observe the long-run underperformance of the acquirers. If the short-run positive bidder abnormal returns are driven by any factors related with long-run fundamental value, we would observe the continuous upward drift in acquirer's stock value if the market underreacts. Over the long run, the blockholder and information stories predict no downward drift in acquiring firms' stock value unless the market overreacts around announcement dates.

3.2.1.2.3. Mode of Acquisition, Size and B/M Benchmarks

Some researchers separate corporate takeovers by the form of acquisition due to their differing effect on the post-acquisition performance of acquirers and have reached a consensus that acquirers under-perform after mergers but not after tender offers. Even though Loughran and Vijh (1997) found that on average bidders do not lose, they commented that post-acquisition returns depend on the mode of acquisition. They observed that on average, mergers generate significantly negative post-acquisition returns (-15.9%) but marginally significantly positive abnormal returns (43%) for tender offers. This implies that even though mergers are usually friendly to the target managers, on average they are

[5] For further analysis see chapter 2 (section 2.2.2).

not in shareholders' best interest while tender offers, which are typically hostile to the target managers, seem to benefit shareholders. The evidence suggests that the disciplining of target managers in tender offers may affect the shareholder wealth gains from acquisition. Martin and McConnell (1991) observed that the turnover rate for the top manager of target firms in tender offer acquisitions significantly increases following completion of the takeover.

Consistent with Loughran and Vijh (1997), Rau and Vermaelen (1998) used a size-based and book-to-market based benchmark proposed by Fama and French (1992) and found that bidders in mergers underperform while acquirers in tender offers overperform (small but statistically significantly positive) in the three-year post-acquisition period. On the other hand, in line with Jensen and Ruback (1983), Agrawal et al. (1992) observed no evidence of unusual performance for tender offers (small and insignificantly different from zero) but found that acquiring firms in mergers earn significantly negative abnormal returns of -13.85% in the three-year post-event interval.

Rau and Vermaelen (1998) argued that the long-term under-performance of acquirers is not uniform across firms and that this is primarily caused by the poor post-acquisition performance of low book-to-market 'glamour' acquirers (significantly negative -17%). Although Sudarsanam and Mahate (2003) reported the same phenomenon for the UK, they found, in contrast to the US study, stronger support for the method of payment hypothesis than for the extrapolation hypothesis. They further argued that, in spite of 'glamour' acquirers enjoying significantly higher announcement returns than 'value' acquirers, they have a much lower three-year post-acquisition return irrespective of the method of payment. In addition, Sudarsanam and Mahate (2003) observed that either when market-

to-book-value ratio or price-earning ratio is used as a proxy for glamour/value status, they both lead to similar results.

3.2.2. Market Conditions

3.2.2.1. Stock Market Activity

Nelson (1959) and Jovanovic and Rousseau (2001) associate aggregate stock prices and mergers. Nelson (1959) points out that i) mergers are highly concentrated in time, ii) merger waves starting in the late 1800s are associated with stock market booms, and iii) the means of payment is generally stock. Jovanovic and Rousseau (2001) show that this correlation persists through 2000.[6] They are the only ones who have applied the q-theory to mergers and claimed to be able to explain merger waves with this theory. They liken mergers to the purchase of used plant and equipment, and show for the period 1971-2000 that their q-equation for mergers outperforms a similar equation for purchases of used-capital. When a firm chooses to expand, however, it has three options: purchase new plant and equipment, purchase used plant and equipment, or purchase another company. Therefore they suggest that merger waves occur during stock market booms, because buying other companies becomes relatively more attractive than purchasing assets in the new or used capital markets.

Both studies suggest that many of the merger waves were caused by changes in the business environment that both increased overall stock prices and led to more profitable merger opportunities. Since mergers represent asset reallocation, merger waves should

occur when there is major technological change. When a major new technology arrives, many firms will not be able to easily adapt it, perhaps because their managers and employees have the wrong skills. Such firms become takeover targets for those firms that can take advantage of the new technology. Mitchell and Mulherin (1996) suggest that mergers are clustered around economic and regulatory shocks, and they provide evidence that merger activity varies significantly across industries. Given that most mergers occur following shocks and there is evidence of a positive stock market reaction to mergers (Andrade et al. (2001)), it is likely that common synergies are created due to the shocks, supporting the neoclassical explanation of merger waves: merger waves occur in response to specific industry shocks that require large scale reallocation of assets. Harford (2005), however, argues that these shocks are not enough on their own and there must be sufficient capital liquidity to accommodate the asset reallocation.

However, according to Gugler, Mueller and Yurtoglu (2003), the industry-shocks hypothesis ignores the association that mergers come in waves and that these waves are correlated with stock market booms. They suggest two ways to bring these two patterns together: First, a single exogenous event causes both a series of merger waves in several industries and the stock market boom. Second, the stock market boom itself causes a series of industry merger waves. However, neither Mitchell and Mulherin (1996) nor Harford (2005) mention the association between aggregate merger waves and share prices; without an explanation that links this association to industry shocks their account of merger waves is incomplete.

[6] They find that merger activity is highly correlated with the size of the stock market, with a correlation coefficient ρ of 0.574.

Furthermore, Shleifer and Vishny (1992) hypothesize that the reason merger waves always occur in booms is because increases in cash flows simultaneously increase fundamental values and relax financial constraints, bringing prices closer to fundamental values. Empirical evidence by Harford (1999) supports this argument by showing that firms that have built up large cash reserves are more active in the acquisition market.

If the market reaction to merger announcement is not based on fundamentals (meaning that behavioural elements drive acquisition decisions), it might also affect merger decisions. Mergers are more frequent when bidders appear to be overvalued (Dong et al., (2005)). Shleifer and Vishny (2003) suggest that if valuations are driven by beliefs, it is possible that managers may make more acquisitions, especially those financed using stock, during periods of optimism because these offer good opportunities to issue large amounts of stock at an overvalued price.[7] Knowing that their shares are overvalued, the managers of these companies exchange them for real assets through mergers, thereby protecting their shareholders from the wealth loss that will accompany the market's eventual correction of its error in evaluation. The target's managers are assumed to have short time horizons, so they also gain (a private gain) by "cashing in" their stakes in their firms at favourable terms. In this case, a rational stock market would react to a merger announcement as evidence that a firm may think its stock is overvalued, leading to a negative announcement reaction with no long run drift.[8] Nevertheless, Shleifer and Vishny (2003) propose a theory on an irrational stock market and self-interested target managers who cash out quickly.

Although mergers are not assumed to generate any wealth-creating synergies, when they

[7] An old and widely used idea in corporate finance is that firms use stock as an acquisition currency in mergers when they think their stock is overvalued. This idea is rooted in asymmetric information arguments such as Myers and Majluf (1984), and it is the basis for numerous studies examining long-run, post-acquisition under-performance.

occur as a result of some firms having overvalued shares under the S&V (2003) theory they appear to be win-win events.

Rhodes-Kropf and Viswanathan (2005) develop a model of rational managerial behaviour and uncertainty about sources of misvaluation that would also lead to a correlation between market performance and merger waves. In their model, rational targets without perfect information will accept more bids from overvalued bidders during market valuation peaks because they overestimate synergies during these periods. Thus, when the market is overvalued, the target is more likely to overestimate the synergies even though it can realize that its own price is affected by the same overvaluation because it still underestimates the shared component of the misvaluation. The greater transaction flow produces a merger wave. However, their model differs from that of Shleifer and Vishny (2003) in that target managers rationally accept overvalued equity because of imperfect information about the degree of synergies.

In a more recent empirical piece, Rhodes-Kropf, Robinson and Viswanathan (2005) present that aggregate merger waves occur when market valuations, measured as market-to-book-ratios, are high relative to various estimates of true valuations based on accounting models or industry multiples. However, they note that their results are consistent with both the behavioural mispricing stories and with the interpretation that merger activity spikes when growth opportunities are high or when firm-specific discount rates are low. This latter interpretation is similar to a neoclassical hypothesis with a capital liquidity component.

[8] Martin (1996) shows that firms that use stocks in acquisitions have lower book-to-market ratios than those that

3.2.2.1.1. Overextrapolation/Hubris Hypothesis

Firm-level valuations seem to have a great impact on the long-run performance of acquiring shareholders. Rau and Vermaelen (1998) provide empirical evidence that the market overextrapolates past managerial performance of bidding firms when assessing the acquisition value. Managers of companies with low B/M ratios tend to overestimate their abilities and to proceed to an acquisition without examining the value and the consequences of a merger with caution (i.e. they are more likely to be infected by hubris). In addition, large shareholders or the board of directors of such companies are more likely to give the management 'more freedom' in approving its acquisitions plans. In this case, hubris-driven acquisitions will more likely lead to share price underperformance.[9] On the other hand, firms' managers with high B/M ratios will be more careful in acquisitions evaluations, because a potential fault will lead to significant losses for the company. Such acquisitions should create shareholder value rather than destroying it, as hubris-driven acquisitions do.

Bouwman, Fuller and Nain (2003) suggest that the overextrapolation is extensive during high market valuation periods. Managers during stock market booms are influenced by the overall state of the market and not just by the valuations of their own firms. Therefore, it is more likely to suffer from hubris motivations, which lack sufficient synergies. As a consequence, such hubris-driven acquisitions undertaken during booming periods lead to a great extent to value destruction, while positive abnormal returns are obtained in the short-

use cash. Stock deals were especially common in the high-flying high-technology sector where most takeovers involved securities.

[9] The winners' curse hypothesis arises in a common value auction (the asset has the same value to all bidders), because the highest bidder has the highest positive valuation error and therefore wins the auction but does not like the "prize" (Bazerman and Samuelson (1983)). However, it bids more than the actual gain, and its shareholders suffer a loss. Of course, rational individuals should not enter into contests in which they lose even when they "win". Thus we need to posit managerial hubris (Roll (1986)). Managers know about the winners'

run. On the contrary, during downward stock market periods, investors seem to be more cautious about acquisition attempts; hence, they conduct only acquisitions that deliver sufficient synergies.

3.2.2.1.2. Investor Sentiment (as a factor-component of Stock Market)

Delong et al. (1990) and Lee, Shleifer and Thaler (1991) argue that when the market is in an upward trend, managers may feel encouraged to make acquisitions because they believe that the market expects firms to undertake growth-enhancing initiatives like acquisitions. Alternatively, managers may use hot markets as a cover to exploit shareholders. If managers are rewarded for increasing stock prices, then they have an incentive to make bad acquisitions in hot markets, since even a bad acquisition may temporarily boost the acquirer's stock price. In addition, acquisitions when market sentiment is bullish are easier than when it is bearish because target resistance is lower when stock prices and the general 'environment' of the market are high and confident respectively due to the fact that targets receive premia that are over and above their already high valuations. On the other hand, when the market sentiment is bearish, the market does not expect acquisitions, and therefore managers respond by avoiding undertaking acquisitions unless the amount of synergies is considered large enough to justify going against market sentiment and expectations.

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curse and know that other acquirers have on average lost money, but have the hubris to believe that they are better than other managers in spotting attractive merger opportunities.

3.2.2.1.3. Herding behaviour

Scharfstein and Stein (1990) and Neeman and Orosel (1999) posit that in case that managers expect more acquisitions to take place when stock prices are rising, each manager may be more interested in acquiring another firm rather than carefully evaluating the potential synergies occurring. In this case fund managers may mimic the investment decisions of other managers, ignoring substantive private information. This is subject to the fact that they believe that the reputation damage made as a part of a herd may be smaller than if the manager had made a more isolated decision and also because managers would not like to be 'left out of the game' during a merger wave.

3.2.2.2. Merger Activity/Waves

One of the most striking characteristics of mergers is that they tend to come in bunches. Various studies providing a definition of merger waves have been reported. For instance, Reid (1968) calls waves the periods of times characterized by relatively large numbers of mergers reported simultaneously in many industries. Alternatively, Rhodes-Kropf et al. (2005) define a merger wave as a sequence of time periods (two or more) in which the probability of a merger occurring is above the unconditional expected probability of a merger.[10]

Rosen (2005) tests the application of hot stock markets to merger markets. More specifically, the study examines whether market factors influence the reaction to a merger announcement. He shows that there is a form of momentum in mergers, which means that

the market reaction to the merger is positively correlated with the response to other mergers in the past. Thus, a hot merger market is one where the reaction to recent market conditions has been favourable. Hot markets are related, although not necessarily the same, as merger waves. Waves are traditionally measured by the number of mergers rather than by the market's reaction to merger announcements. The market reaction depends on the new information contained in a merger announcement (for example, whether synergies are created due to a merger) as well as how the market reacts to that information.

Below three competing explanations are provided for mergers and are evaluated on to what extent they are consistent with the evidence of merger momentum he finds:

3.2.2.2.1. The Neoclassical Theory

The neoclassical theory of mergers assumes that managers act to maximize shareholder value. If mergers are concentrated around common shocks that positively affect the potential synergies from all mergers, then mergers following shocks should be better than other mergers. Under this theory, merger momentum may result from shocks that increase synergies for a group of mergers. Mergers announced following these shocks should be better on average than other mergers, leading to correlated announcement returns. Thus, while the number of mergers and the market reaction to merger announcements do not need to be related, if the neoclassical theory holds and if merger waves are responses to common shocks, then merger waves and merger momentum should be highly correlated.

[10] Therefore, they suggest that when looking at historical data we will never know if a time period with a large number of mergers was a merger wave or just a high number of positive realizations. However, the more mergers we see, the more likely the time period is a wave.

3.2.2.2.2. The Managerial Discretion Hypothesis/Managerial Objectives

The managerial discretion hypothesis assumes that managers get utility from seeing their firms grow rapidly. This utility might arise because managers' incomes are tied to the growth of the firm, or because they get 'psychic income' from managing a larger firm. Marris (1964, 1998) was the first to posit growth objectives for managers. He hypothesized further that managers were constrained in their pursuit of growth by the threat of a takeover, which he assumed to be inversely related to the market-to-book ratio. Some managers are empire builders. Under the managerial discretion hypothesis mergers are the fastest way for a firm to grow, and thus empire-building managers undertake mergers even when they lower the wealth of their shareholders (Mueller, (1969)).

Managerial motivations, possibly in reaction to shocks, can also lead to increases in merger activity. If managerial objectives drive merger decisions, then acquisitions during waves may be worse than other mergers (Gorton et al. (2002)). This is due to the fact that when acquisition reduces the profitability that a firm is subsequently acquired, managers can use mergers to preserve private benefits. Under such a circumstance the phenomenon 'eat or be eaten' comes up, since managers make acquisitions to deter other bidders from acquiring their firms creating merger waves (Morck et al. (1990)). These are defensive in nature acquisitions and are more likely to destroy rather than create value.

Under either theory, rational shareholders are assumed to react immediately to the new information (positively under the neoclassical theory, negatively under managerial motivation hypothesis) contained in a merger announcement. Therefore, there should be no long run reversal after the announcement or at least there is no reason that the post-

acquisition bidders' performance should depend on when the merger announcement occurs.

3.2.2.2.3. Investor Sentiment (as a factor-component of Merger Activity)

There is evidence that investors may be overly optimistic in so-called hot markets. First of all, in markets other than merger markets, Loughran and Ritter (1995) attribute high returns on Seasoned Equity Offerings (SEOs) to optimistic beliefs on the part of investors. Ljungqvist et al. (2002) argue that, in hot markets, regular institutional investors are allocated Initial Public Offering (IPO) stock at a discount for gradual resale to exuberant investors in the after market. Underpricing serves to compensate the 'regulars' for the risk they take by restricting the supply of available shares and maintaining prices, despite the possibility that the hot market may end prematurely. Similarly, the prospect theory of underpricing and hot markets proposed by Loughran and Ritter (2002) suggests that large mispricing (underpricing) occurs in hot IPO markets.

The same phenomenon could exist in hot merger markets. More specifically, investor sentiment theory suggests that shareholder reaction to a corporate announcement can be affected by overly optimistic beliefs on the part of investors and possibly managers; this is a reaction to factors other than the value created by the merger. If over-optimism affects the market reaction to merger announcements, then we should see autocorrelation in the returns to bidding firms from merger announcements. In other words, during hot merger markets, when optimism is a dominant ingredient of the market, the market reaction to all announcements should be more positive than at other times. Therefore merger momentum could result from investors as a group becoming optimistic about mergers announced during a particular period of time.

Rosen (2005) finds evidence that acquirer stock prices are more likely to increase when the merger is announced in high-valuation markets as compared to low-valuation markets (hot versus cold markets) or if the overall stock market is doing better than a long-term average. However, this effect disappears in the long run, as share prices are reversed. Long- run bidder stock returns are lower for mergers announced when either the merger market or the stock market is hot at the time of the acquisition announcement than for mergers announced at other times as optimism is replaced by results.

3.3. Data

3.3.1. Description of Data

We identify a sample of successful acquisitions by UK public companies that acquired domestic targets, announced between January 1, 1984 and May 6, 2004.[11] The sample acquisitions are drawn from the Thomson Financial Securities Data Corporation's (SDC) Mergers and Acquisitions (M&A) Database and the period selected is driven by the total availability of the SDC Database. The following criteria are used in selecting our final sample:

- Acquiring firms are UK firms publicly traded on the London Stock Exchange (LSE) and have five days of return data around the acquisition announcement and 36-month return data listed on the DataStream Database.
- The bidder acquires at least 50% of the target's voting shares as a result of the acquisition.

[11] SDC is a commercial database that includes information on UK takeover bids since 1980. However, the first domestic acquisition after our restrictions set appears in 1984.

- The target is a public, private, or a subsidiary firm.
- The deal value is one million dollars or more.[12]
- We delete financial and utility firms (following Fama and French (1992)) for both bidders and targets.

We do not include foreign acquisitions as this would contaminate our analysis. Since we examine the performance of bidding firms as a matter of market valuations, it is obvious that the inclusion of deals made in foreign (non-UK) markets with different market/business cycles, corporate governance, regulations and, generally, market conditions would lead to doubtful conclusions. Eventually, our sample that satisfies all the above restrictions consists of 3,512 acquisitions.

Similar to Ang and Kohers (2001), we group the method of payment into three categories: (1) cash financing which includes transactions made solely in cash or cash and debt; (2) stock offers are defined as transactions made solely in common stock; (3) combination financing which comprises of offers consisting of both cash and stock and/or convertibles, and methods classified as 'other' by SDC. As we use Dimson et al. (2003) UK three-factors to account for UK book-to-market peculiarities, we include in our long-run analysis bids carried out between 1984-1998 for three-year analysis (2,332 firms), bids up to 1999 for two-year analysis (2,615 firms), and takeovers from 1984-2000 (2,918 firms) for one-year analysis respectively.

[12] We employ a one million dollars cut-off point to avoid results being generated by very small deals. Similarly, studies like Fuller, Netter, and Stegemoller (2002) and Moeller, Schlingemann and Stulz (2004) in the US use a cut-off point of one million dollars.

3.3.2. Classification of High Valuation-Low Valuation Markets and Hot-Cold Merger Markets

We classify each month into a high-, neutral- or low-valuation period. Firstly, we use monthly TOTMKUK P/E data from 1984 to 2004 to capture price levels that existed in each month from January 1984 till May 2004. We collect P/E data from Datastream. Since DataStream provides data for P/E ratio of FTSE All Share from 1993 onwards, we use the TOTMKUK (Total Market UK), which is the closest index to FTSE All Share (the correlation between these two indices is 99.92%). Jovanovic and Rousseau (2001) find that merger waves coincide with periods of high price-earnings ratios on the stock markets, which is used as a proxy of market valuation. Bowman, Fuller and Nain (2004) also employ the same proxy. In order to classify each month into a valuation group we first detrend the market (TOTMKUK) P/E by removing the best straight line fit (OLS) from the P/E of the month in question and the five preceding years.[13] Each month is classified into an above (below) average group if the detrended P/E of that month was above (below) the past five-year average. In other words, when the P/E residuals of that month is above or below the past five-year average P/E residuals. Then the months are ranked in order of detrended P/E. The top half of the above-average months are classified as high-valuation months and the bottom half of the below-average months are classified as low-valuation months. All other months are classified as neutral-valuation months.

Secondly, for robustness reasons, we employ an alternative classification of high, neutral and low-valuation acquisitions by using the TOTMKUK itself rather than the P/E ratio of

[13] It is necessary to remove the trend from the market P/E ratio because P/E ratios have trended upwards. Hence, if we do not remove the trend, then this would result in a systematic classification of more recent acquisitions as high-valuation acquisitions and older acquisitions as low-valuation acquisitions. Our results are robust to reasonable changes in the length of the historical data used in the detrending.

the TOTMKUK index.[14] The index level in each month is classified as above or below the past five-year average TOTMKUK index level.[15] The top half of TOTMKUK levels in the above average groups are classified as high-valuation months, while the bottom half of TOTMKUK levels in the below-average group are classified as low-valuation months. All other months are classified as neutral-valuation months.

Finally, we classify each month into a hot or cold merger period. We use the monthly number of acquisitions undertaken from 1984 to May 2004 to capture merger waves and merger momentum from January 1984 till May 2004. These months are ranked from top to bottom according to the number of mergers. Each month is classified as a hot (cold) takeover month if the number of acquisitions of that month lies above (below) the top (bottom) 30% of the months with the largest (smallest) number of acquisitions.

3.3.3. Description of Event Study Samples

Table 3.1 presents some descriptive statistics of our sample. We find during the period January 1984-May 2004 52 high-valuation periods, 68 low-valuation periods and 122 neutral-valuation periods. Therefore, we report that our sample contains 1,014 high-valuation acquisitions, 1,796 neutral-valuation acquisitions and 702 acquisitions initiated in low-valuation periods. With respect to the method of payment used in the transaction we observe the dominance of cash and combination financing (1,963 and 1,360 respectively), while very few deals were done with stock (only 189). In addition, as expected according to the literature, our sample reflects that acquisitions of private and subsidiary targets are

[14] Since we used the P/E ratio of the TOTMKUK index, for reasons of consistency we employ this index instead of the FTSE ALL Share index.
[15] We remove the best straight-line fit (OLS) trend from the TOTMKUK index level before classifying each month as above or below the past average. The detrending procedure is the same as the one described for the P/E ratio.

major components of the takeover activity (approximately 93% of our sample). In terms of the total deal value, 33.97% of all acquisition pounds are spent in high-valuation periods and only 15.25% in low-valuation periods. In addition, it is shown that high-valuation periods are accompanied with greater merger activity than low-valuation periods (28.87% vs 19.99%). Looking at the size, a noticeable point is that the mean market value of bidding firms is larger in high-valuation periods when they use cash or when they purchase public targets. All these are issues that characterize managers of companies that are infected by hubris, since usually this kind of managers is likely to be overconfident to: i) initiate acquisitions during high valuation periods when the overall state of share prices is in very high levels; ii) use cash to try to reflect to the market their budget capacity, although they reduce their liquidity; or iii) buy large companies (public firms are far larger than private firms or subsidiaries), taking the risk that such a transaction can entail. In addition, about 35% of all stock acquisitions are made in high-valuation periods while only 16% are made in low-valuation periods, suggesting that acquirers prefer to use stock when they believe that it is overvalued, instead of paying with possibly undervalued stock during low-valuation markets.

3.4. Methodologies

3.4.1. Short Run[16]

We calculate Cumulative Average Returns (CARs) for the five-day period [-2, +2] around the announcement date supplied by SDC.[17] More specifically, we estimate the abnormal returns by using a modified market-adjusted model:

[16] See Chapter 2 (section 2.3.3.1) for a more thorough analysis of the importance of short-run event studies and the model we use.

$$AR_{it} = R_{it} - R_{mt} \quad (1)$$

where R_{it} is the return on firm *i* and R_{mt} is the value-weighed market index return (i.e. the FT-All Share). The t-statistics are estimated using the cross-sectional variation of abnormal returns.[18]

3.4.2. Long Run

The selection of a proper benchmark is always problematic when examining long-term returns. Early evidence from over a decade ago strongly suggested that the models used to measure short-run impacts were not suitable for long-run analyses (e.g. Conn-Connell (1990)). Commonly used models such as Capital Asset Pricing Model (CAPM), Market Model, Market-Adjusted Model, all using daily and monthly data, showed significant signs of parameter instability and hence loss of reliability as generators of benchmark expected returns (e.g. Coutts, Mills, Roberts (1997)). While the models were suitable for short-run analysis due to the magnitude of valuation effects, the cumulative influence of model instabilities made long-run analysis less reliable. For example, Lyon, Barber and Tsai (1999) report 'the analysis of long-run returns is treacherous' while Fama (1998) argues that bad model problems are 'unavoidable.... and more serious in tests of long-run returns'.

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[17] We choose the five-day period because Fuller et al. (2002) find that a five-day window around the merger announcement given by SDC is wide enough to capture the first mention of a merger every time for a sample of about 500 announcements.

[18] We do not estimate market parameters based on a time period before each bid, since our sample contains acquirers making many acquisitions within a very small period of time and therefore, there is a high probability that previous takeover attempts would be included in the estimation period, hence making beta estimations less meaningful. Additionally, it has been shown that for short window event studies, weighting the market return by the firm's beta does not significantly improve estimation (Brown and Warner (1980)).

Ritter (1991) posits that the use of whether the CARs or BHARs (Buy-and-Hold abnormal returns) depends on the research question we would like to address. Barber and Lyon (1997) favour the use of BHARs because i) CARs are not able to reflect the investor's experience that holds a security for a long post-event period, and ii) CAR is a biased predictor of BHAR. Biases in the estimation of mean abnormal long-term returns from daily data are largely eliminated by using buy-and-hold returns and matching event firms to a reference portfolio of control firms, leaving only the bad model problem.[19] However, it seems that both CARs and BHARs have their own advantages and can be considered as complementary rather than competing approaches.

In sum, all methodologies exhibit several problems and biases and therefore any inference and results could be misleading. Lyon, Barber and Tsai (1999) summarize the biases: i) *The new listing bias* arising due to the sample firms usually have a long pre-event return record, whereas the benchmark portfolio includes firms that have only recently begun trading and are known to have abnormally low returns. Loughran and Ritter (1995) record negative CARs for newly listed firms in the US over the 1970s and 1980s. As Kothari and Warner (1997) note, any selection criteria that have the consequence of systematically excluding newly listed firms will impact a positive bias to the average CAR to the selected firms. ii) *The rebalancing bias* because of the compounded return on the benchmark portfolio implicitly assumes periodic rebalancing of the portfolio weights, whereas the sample firm returns are compounded without rebalancing. iii) *The skewness bias* referring to an asymmetric t-distribution with a mean smaller than the zero null due to a skewed-right distribution of abnormal returns. Brown and Warner (1980) show that the use of

[19] Lyon, Barber and Tsai (1999) show how carefully constructed portfolios, in conjunction with the bootstrap approach of Ikenberry et al. (1995), can eliminate a number of these biases.

monthly data significantly increases the severity of skewness. iv) *Bad model problems*, due to ill-specified models of expected returns, since they provide a firm-specific benchmark expected return without implying any particular restrictions on the cross-section of expected returns. v) *Cross-sectional correlations*, as Brav (1997) postulates, due to industry effects or other contemporaneous cross-firm connections, which cause fewer independent observations than there seem to be.

For the purpose of our study we use the Calendar Time Portfolio Regressions (CTPR) to allow inferences that are not biased by cross-sectional dependence.[20] Since a very large proportion of our sample appears to include multiple bidders, which indicates overlapping observations in the estimation of returns, CTPR is considered as the most appropriate methodology we can apply. In each calendar month, a portfolio is formed by including all stocks with an acquisition event during the past 12, 24, or 36 months. The portfolio is rebalanced every month by including new event firms which executed a transaction in the previous month and dropping the ones whose latest acquisition event falls out of the one to three-year holding period. The average monthly abnormal return during the one to three-year post-event period is the intercept from the time-series regression of the calendar portfolio return on the Fama and French three-factor model. The FF three-factor model is estimated by using the UK 3-factor of Dimson et al's (2003) to account for the UK B/M ratio peculiarities :[21]

$$R_{pt} - R_{ft} = a_i + \beta_i (R_{mt} - R_{ft}) + s_i SMB_t + h_i HML_t + \varepsilon_{it} \qquad (2)$$

[20] Cross-sectional dependence caused by overlapping observations leads to downwards-biased standard errors and therefore causes t-statistics to be biased upwards. In addition, according to Mitchell and Stafford (2000), due to the number of firms being different for each month, heteroskedastic residuals are likely to be present when regressing calendar time average portfolio returns in excess of the risk free rate against the factors of an asset-pricing model. Hence, we use Andrews (1991) heteroskedasticity and autocorrelation consistent standard errors so as to realistically assess the validity of our results.

where R_{pt} is the average monthly return of the calendar portfolio, R_{ft} is the monthly risk free return, R_{mt} is the monthly return of the value-weighted market index, SMB_t the value-weighted return on small firms minus the value-weghted returns on large firms, and HML_t the value-weighted return on high book-to-market firms minus the value-weighted return on low book-to-market firms. In addition, β_i, s_i and h_i are the regression parameters and ε_{it} is the error term. The α (intercept) is interpreted as the average of the individual, firm-specific intercepts.

3.5. Empirical Evidence

3.5.1. Short-Run Abnormal Returns by Market Valuation

3.5.1.1. Bidder Performance by P/E classification

Table 3.2, Panel A, presents the five-day CAR [-2, +2] for all acquisitions. We find that, for the overall portfolio, bidders experience positive (0.79%) and significant abnormal returns at the 1% level. Consistent with the mounting body of the literature, we find positive and significant abnormal returns (0.73%) for cash payments and statistically significant negative abnormal returns (-1.16%) when stock is used as a medium of exchange. This is consistent with Myers and Majluf's (1984) theory which suggests that the greater information asymmetry associated with stock payments leads to more negative performance. In addition, acquisitions made with mixed payments appear to generate positive and significant abnormal returns of 1.16%. When we differentiate on the basis of

[21] Dimson, Nagel, and Quigley (2003) use different breakpoints to those of Fama-French (1993) to construct Size and Book-to-Market portfolios mainly due to size and B/M ratio being negatively correlated in the UK and

target ownership status we obtain significant negative abnormal returns for public targets (-1.59%) and significant positive CARs for private targets and subsidiaries (0.96% and 0.99% respectively). For public targets, we report negative CARs of -3.32% for stock payments while CARs for cash or mixed form of financing are negative but insignificant (-0.62% and -1.34% respectively). For private targets and subsidiaries CARs are positive (0.96% and 0.99% respectively) and mostly significant irrespective of the means of exchange (insignificant only when stock is used as a method of payment).

Panel B presents the performance of bidders in a high-valuation period according to the P/E classification. In numbers, we observe that bidders exhibit large positive and significant abnormal returns of 1.58%. Panels C and D display the performance of acquirers during neutral and low valuation period respectively. In neutral valuation mergers acquirers exhibit positive and significant abnormal returns (0.56%), while insignificantly positive abnormal returns are obtained during low-valuation acquisitions (0.25%). Differences-in-mean tests (Panel E) indicate that the announcement returns are significantly higher for high-valuation acquisitions than for low-valuation acquisitions (1.33%). This suggests that the market welcomes acquisitions during high-valuation periods and rewards them, in the short run, more than acquisitions initiated during low-valuation periods. In other words, the market is less welcoming of acquisitions during bearish periods than during booming periods. The pattern of negative CARs for public targets and positive CARs for private targets and subsidiaries holds irrespective of the valuation period examined.

large firms (small firms) being concentrated in the low (high) BE/ME quartile.

Comparing the Panels B and D of Table 3.2, we clearly observe more pronounced positive abnormal (or less negative in the case of public targets) returns during bullish markets than bearish markets regardless of the target public status or the method of payment used in the transaction. In particular, bidders enjoy significant profits when buying private targets and subsidiary (an impressive 2.18% for private and 1.27% for subsidiaries) targets. In addition, they exhibit negative abnormal returns when they buy public targets; however, these are equal to -0.86% and most importantly they are insignificant. Nevertheless, looking at Panel D of a low-valuation period, bidders experience negative and statistically significant abnormal returns when they buy public targets. When we partition the sample by the method of payment and market valuation, results indicate significant and positive performance for cash acquisitions that took place during high (1.22%) and neutral valuation periods (0.69%) but insignificantly positive CARs for cash acquisitions during low-valuation periods. This is confirmed by Panel E, which shows that the five-day announcement CAR for high-valuation cash acquisitions is 1.06% higher than the CAR for low-valuation cash acquisitions. These results suggest that the market during high-valuation periods entails more liquidity, offering the opportunity of higher debt capacity for bidding firms to initiate acquisitions. This is consistent to Andrade, Mitchell and Stafford (2001) who find that in overvalued markets cash offers lead to a much larger positive announcement affect on the target and a better performance (a less negative effect) on the acquirer. A further indication of market reward (or at least not punishment) for bullish market acquisitions is the positive (even insignificant) bidder performance for stock acquisitions (0.97%), while acquirers experience, on average, losses during both low (-1.43%) and neutral (-2.63%) valuation periods when share exchanges take place. Along these lines, Rhodes-Kropf and Viswanathan (2005) suggest that management is more likely to overestimate the value of stock bids in overvalued markets. On the whole, our

results suggest that the state of the market at the time of the merger announcement significantly affects the abnormal returns experienced by the acquirers around the announcement day. In other words, the market offers more wealth gains during high-valuation acquisitions than low-valuation acquisitions.

The same procedure is used by exploring the performance of bidding firms in the short-run through the investigation of an alternative event window [-20, +20] for robustness reasons. We intend to confirm that the market's thumbs-up announcement-effect reaction to high-valuation acquisitions and thumbs-down announcement effect reaction to low-valuation acquisitions stands when we extend the period surrounding the announcement. For bids of UK public targets, Draper and Paudyal (1999) argue that an event window of up to 20 days preceding and following the announcement should be used. The UK takeover legislation permits a situation where bidders of UK public firms may start building up their stake well before the bid announcement. Once the bid is formally announced, it must remain open for at least 14 days after the announcement date. In addition, the employment of an alternative window is made because there is always the possibility that the market starts reacting to bids for unlisted targets well before the publicized announcement date. One could argue that since our vast majority of deals includes private or subsidiary acquisitions, in which announcement dates in most cases converge effective dates, we fail to capture the information, rumours and negotiations that take place before the event and the total market reaction and resolution after the acquisition. To the extent that bids for unlisted targets may well be made sometimes before they are formally announced or recorded in SDC, the market may start reacting to news and rumours surrounding the bid well before the recorded announcement date. In other words, a merger is the result of negotiations between an acquirer and a target. Therefore, because of the negotiation process between the merger

partners that is inherent in a merger, news leakage is very likely for mergers. This is consistent with Schwert's (1996) finding which shows significant run-ups in targets' prices as far back as one month (21 trading days) before a merger announcement. Hence, in a merger, the stock price adjustment is likely to start weeks before the merger announcement during the rumour phase of the merger. As a consequence from the above is that further extension of the event window is considered essential. However, we should note at this point that lengthening our event window may lead to inaccuracy in capturing new information induced by the actual event. In other words, a longer window may be less accurate or powerful than a relatively short window surrounding the bid announcement. To the extent that the market reacts efficiently to new information, the actual abnormal return will be better detected within a shorter window, as the longer the window used, the greater the noise in abnormal return estimation (Dong et al., (2005)).

Table 3.3, Panel A, presents 41-day CARs [-20, +20] for the full sample classified by target public status and method of payment. In general, results are consistent with the patterns we obtained in Table 3.2 for five-day CARs. For all bids, the CAR is positive (0.76%) and statistically significant at the 1% significance level. When focusing on public targets we obtain negative but insignificant CARs of –1.95%. When we further differentiate on the basis of method of payment, CARs are, surprisingly, all insignificantly negative irrespective of the mode of payment used, with stock payment generating the largest negative and highly significant CARs of –1.65%.

For private targets, CARs are positive (0.86%) and significant. This is in line with Chang (1998) and Ang and Kohers (2001) who document substantial gains for acquisitions of privately held firms. For subsidiaries the performance is still positive, as bidders enjoy

profits of 0.90%, with cash exchanges driving the result (1.35%). This is in line with Faccio and Masulis (2005) who posit that, when a subsidiary acquisition takes place, cash is preferred since corporations selling subsidiaries are often motivated by financial distress concerns or a desire to restructure towards their core competency. Consequently, there is a strong preference for cash consideration in order to realize these financial or asset restructuring goals and also due to the fact that bidders are frequently motivated to divest subsidiaries to finance new acquisitions or reduce their tax burden. Such preference for cash payments is likely to lead to significant positive returns.[22]

The patterns obtained from the five-day window are reflected even more impressively by examining the [-20, +20] CAR. More specifically, all acquirers in high-valuation periods (Panel B) earn significant profits of 3.07%, while CARs for low-valuation acquisitions (Panel D) reflect a punishment of the market to bidders leading to negative (though insignificant) abnormal returns (-0.04%). This significant difference of 3.10% is displayed in Panel E. Noteworthy findings are obtained when we split our sample according to the method of payment and the target public status. Acquisitions are positive and significant regardless of the mode of exchange or the type of target acquired apart from public targets. In numbers, cash acquisitions lead to CARs of 3.34%, while stock acquisitions drive the performance of bidders even higher (5.58%). Bidders buying private (subsidiary) targets during booming markets experience, on average, gain of 4.06% (1.82%), while CARs remain positive (1.94%) for public acquisitions though they are insignificant. On the other hand, during low-valuation periods cash payments lead to negative CARs (-0.58%), having a significant mean-difference when comparing with the cash payments in high-valuation

[22] However, Fuller et al. (2002) document higher returns for subsidiary targets when stock is used as a method of payment.

periods (3.91%). Stock payments exhibit positive but insignificant CARs (1.00%). When we divide the sample on the basis of target status we obtain significantly negative abnormal returns (-4.93%), which are driven by the significant negative cash acquisitions (-5.64%). Interestingly, even private acquisitions, which, as shown above, lead to positive abnormal returns, generate losses during low-valuation periods, while subsidiary acquisitions exhibit positive CARs of 1.37%. In sum, results indicate that the market overreacts and treats favourably acquisitions made during high-valuation periods, rewarding the bidders with significantly larger profits than acquisitions during low-valuation periods and showing that is indifferent whether acquisitions in high-valuation periods are indeed value enhancing and reflect potential synergies. In a nutshell, market valuations seem to drive acquisitions over and above the method of payment or the target ownership status.

3.5.1.2. Abnormal Returns by Index (itself) Classification

For further confirmation of our short-run evidence we demonstrate our robustness test using the TOTMKUK index itself in order to classify each month as a high-, low- or neutral-valuation month. Table 3.4 (Panel A) is exactly the same as Table 3.2 (Panel A), since it contains the results we obtain for the [-2, +2] overall portfolio. Looking at Panels B and D, we identify similar patterns to the ones we found using the P/E classification. All acquirers in bullish markets experience significant gains of 1.03%, while less profit is obtained during low-valuation periods (0.36%). This difference (0.67%) is confirmed when we proceed to mean-difference tests (Panel E). Once again, the patterns remain similar, as for high-valuation periods we find positive and significant abnormal returns for private targets and subsidiaries (1.44% and 0.88% respectively), while acquirers buying public targets experience negative and significant CARs (-1.42%). Comparing with low-

valuation periods (Panel D), we document positive but insignificant CARs for private targets (0.38%), significantly positive abnormal returns for subsidiaries (0.81%) and larger losses for public targets (-3.04%). In addition, when we look across the methods of payment, cash and mixed exchanges lead to positive and significant CARs (0.82% and 1.44% respectively) during bullish markets, while negative CARs (-0.24%) are obtained for share exchanges. In contrast, acquisitions undertaken during low-valuation periods exhibit insignificant CARs for both cash and stock (positive for cash (0.31%), negative for stock (-1.83%)). Such findings reflect that bidders experience better performance during high-valuation periods, as the market reacts favourably to investors for the risk they take to invest during these periods when market valuations are high.

Table 3.5 examines the 41-day [-20, +20] window CARs of bidders using our alternative classification of market valuation (TOTMKUK index itself). In general, return patterns are similar with those of Table 3.2 (Panel A). We find that for the overall portfolio bidders generate positive (0.76%) and significant abnormal returns at the 1% level. When we divide our sample by the medium of exchange, we find positive and significant abnormal returns (0.98%) for cash payments and negative but insignificant abnormal returns (-0.49%) when stock is used as a means of financing. Accordingly, bidders purchasing public targets experience insignificant losses of -0.73% while they earn significant gains when they buy private and subsidiary targets (0.86% and 0.90% respectively). Acquisitions undertaken during high-valuation markets lead to positive abnormal returns (0.60%), though insignificant, while bidders gain, on average, 0.48% during low-valuation periods. We find negative but insignificant CARs for acquisitions of public targets (-0.16%) and, surprisingly, subsidiary targets (-0.68%) and positive and significant abnormal returns for private targets during booming market. Public acquisitions undertaken during low-

valuation period lead to significant and negative CARs of -3.79%, while positive and significant CARs are experienced for subsidiary targets (2.09%) and insignificantly negative for private targets. In sum, the results we obtain using the TOTMKUK index classification itself reinforce the empirical evidence we obtained using the P/E classification.

3.5.1.3. Abnormal Returns by Merger Activity

Table 3.6 (Panel A) demonstrates five-day CAR for all acquisitions undertaken in hot merger markets. We observe that, overall, acquirers exhibit similar performance to the one obtained when examining abnormal returns of acquirers as a consequence of market valuations in Panels A of Tables 3.2, 3.3, 3.4 and 3.5, as they exhibit a positive and significant CAR of 0.77%, indicating the existence of a merger momentum under the neoclassical theory. When we differentiate on the basis of target ownership status we find that bidders gain when buying private targets and subsidiaries (1.00% and 0.80% respectively), but lose when acquiring public targets (-1.30%). With respect to the method of payment, cash and mixed payments lead to positive and significant CARs (0.62% and 1.16% respectively), while insignificantly negative returns are obtained when stock is used as the form of financing. Patterns (apart from acquisitions of subsidiaries that lead to negative performance) when we extend the event window to 41 days (Panel B) surrounding the announcement [-20, +20] are similar to the five-day ones; however, all CARs we obtain are statistically insignificant.

In Table 3.7, Panel A (Panel B) we document five-day (41-day) CARs of bidders making acquisitions during a cold merger market. We observe that bidders experience positive and significant CARs of 1.14% (1.59%), which are higher than those during hot merger

markets discussed above. This result is in contrast to the rational expectation of larger abnormal returns in hot merger markets which, according to empirical research, are positively correlated with high-valuation markets. A plausible explanation for this finding is that the market understands that mergers that are not 'pushed' by the general takeover environment are mergers undertaken with more care and therefore it treats them more favourably. Since in cold acquisition periods few acquirers take the initiative to initiate a merger, the market realizes that potential synergies lie behind such acquisitions and rewards them. Alternatively, if we view it from the other way round, the managerial discretion hypothesis is likely to be a dominant factor since managers make poorer acquisitions when they expect more acquisitions to be undertaken. When merger activity is high, each manager may be more inclined to acquire another firm and be less careful in assessing synergies while he/she may be fearful not to become the 'victim' of a merger procedure ('eat or be eaten'). In addition, the reputation damage from a bad acquisition made as a part of a herd may be smaller than if the manager had made a more isolated decision. Finally, another interpretation is that during hot merger markets the bidding firm's stock is affected by hubris (Roll (1986)). The managers of bidding firms that had a recent success in a general noisy environment may believe that they can create value in situations that the market judges to be of a negative net present value. The managers thus want to make acquisitions even when they anticipate the announcement will generate a decline in stock prices or will not lead to large instant profits. They expect that they will be proved correct in the future. Because shareholders have imperfect control, they do not prevent managers from making such acquisitions. Therefore, when managers make bad acquisitions because of hubris, rational shareholders should discount the stock price.

Subsequently, we intend to find the various interrelationships between periods of different market valuation and merger activity.[23] In this way we explore to identify whether stock market or merger activity drive our results. In Table 3.8, Panel A (D) displays bidder gains for five days (41 days) surrounding the announcement during parallel high-valuation markets and hot merger activity. We find that bidders experience positive and significant CARs of 1.55% (1.71%) during simultaneous high-valuation market and cold merger activity (in Panels G and J bidders enjoy profits of 0.85% and 4.48%). As we can observe from Panel N, only for the 41-day CAR is there a significant difference in the means, partially showing that the general noisy environment of the stock market and market reaction to mergers is taken with great caution (i.e. high-valuation period-cold takeover activity), leading to better performance. Most importantly, both in hot and cold takeover markets bidders experience, in general, better performance during high-valuation periods than low-valuation periods. This indicates that in any classification of merger market (hot-cold), prices are driven by the overall level of the stock market. The opposite -i.e. that in any classification of stock market (high-low valuation period) prices are driven by the existence or not of merger waves- does not exist. Rhodes-Kropf and Viswanathan (2005) argue that with each new merger the market increases its expectation of the probability that the synergies of all firms are high and therefore subsequent mergers lead to smaller price revisions. As a result, a merger wave that occurs when markets become overvalued may not end until the market realizes the true value of the synergies of the early mergers. Hence, waves of financial activity will occur in overvalued markets and end with a market crash when participants learn information about synergies that lead them to question the gains from the entire sequence of mergers. As they conclude 'it is not the case that mergers predict market crashes, but it is rather that market crashes are preceded by mergers'.

[23] For market valuation the P/E classification is employed.

3.5.2. Long Run Performance

3.5.2.1. Abnormal Returns by P/E Classification

Table 3.9, Panel A contains the one-year post-acquisition monthly average abnormal returns. From the table we observe that acquirers experience significant and negative monthly abnormal returns for the entire sample (-1.00%) of 2,918 acquisitions and the six sub-groups of public, private and subsidiary targets and cash stock and mixed payment method. This finding suggests that acquirers lose, on average, over one year after the acquisition irrespective of target ownership status or whether cash or stock is used as a form of financing. With regards to the method of payment, cash leads to less wealth loss (0.91%) as it can be shown by the significant (at the 5% level) zero investment portfolio used to calculate the differential.[24] In addition, when we differentiate on the basis of target public status we find that acquisitions of private or subsidiary targets destroy less shareholder wealth value than public acquisitions. Similar results are obtained for two and three year-analysis respectively (Tables 3.10 and 3.11).

When we partition our sample based on the market valuation (Panels B, C and D), we find that high-valuation acquirers outperform significantly (less wealth loss) low-valuation acquirers by 4.28%. In addition, acquisitions of private targets and subsidiaries undertaken during booming periods are less value destroying than the same acquisitions during bearish markets (differences in mean are 3.39% and 8.80% respectively). This could be linked to the divergence of opinion concept. Private firms and subsidiaries are more likely to entail less available information to investors increasing the uncertainty and the differences in

[24] The zero investment portfolio is applied by taking the mean return difference each month between the «high» portfolio and the «low» portfolio (in general the two portfolios for comparison each time) and then regress this new time series on the Fama-French three factors.

opinion. During hot markets investors are mostly optimist, hence reducing the belief asymmetries and therefore the returns. However, during cold markets investors take their initial positions (optimists/pessimists) and the divergence of opinion increases, leading to larger abnormal returns.[25] Neutral valuation acquisitions also significantly underperform in the post-event period. For two and three-year post acquisition analysis, the results we obtain are mostly similar (Tables 3.10 and 3.11).

In general, it is evident from these results that high-valuation acquisitions, on average, destroy significantly more value for shareholders in the long run than low-valuation acquisitions. This can be attributed to investor sentiment (over-optimism) during boom markets. If market participants are optimistic about the prospects for a merger, then they will bid up the stock of the merging firms. However, as the performance of the merged firm is revealed over time, market participants may revise their views of the quality of the merger downward, losing their optimism. Moreover, the possibility of the neoclassical hypothesis that does not predict a long-run downward drift in prices is disqualified since we find negative performance in the long run.

In addition, managers are likely to be infected by hubris that their managerial skills are high enough to lead the company to great success. Therefore, the general pressure existing during boom markets increases their hubris and drives them to acquisitions with less care about the actual synergies that will occur after the merger. However, the market realizes by the time the real value of the company after the merger and disregards it, leading it to a bad performance. Finally, as better stock performance reflects smarter business strategies, we find that acquirers who make cash or stock acquisitions in low-valuation periods make

[25] Doukas, Kim and Pantzalis (2004) suggest that the greater the uncertainty, the larger the abnormal returns.

better decisions than acquirers who make cash or stock acquisitions in high-valuation periods.

Another point worth mentioning is that cash acquisitions are also negative and significant in the long run. This finding appears to be inconsistent with previous empirical evidence (i.e. Loughran and Vijh (1997) and Rau and Vermaelen (1998)), presenting a pervasive positive abnormal performance of cash acquisitions. One potential explanation is provided by a recent article in the *Financial Times* (08 Dec. 2004), which suggests that bidders in the UK used to borrow cash from debt markets with high interest rates and for terms that generally do not act in the interests of shareholders:

'Most of the businesses were bought with financing packages on punchy multiples, where debt was six or seven times as great as the earnings before interest, tax, depreciation and amortization...If everyone is using leverage to bid up prices that does not make investment sense. It encourages private equity firms to outbid each other and I can't see it not ending in tears for some'.

Banks are also looking to invest in all levels of the capital structure, and are viewing returns on a blended basis, however the risk remains that banks may suffer a greater level of write-offs in the future. On the whole, cash use for UK acquisitions appears to be "expensive" and in general overvalued.

3.5.2.2. Abnormal Returns by TOTMKUK Index Classification

When we use the Total Market UK (TOTMKUK) index itself we find similar results. Table 3.12, Panel A is exactly the same as the Panel A of Table 3.9 reporting the patterns of the overall portfolio. When we examine bidder performance during high-valuation periods (Panel B) we obtain significantly negative abnormal returns (-1.87%) for the one-year post-event period. The monthly average abnormal return for bidders initiating acquisitions during low-valuation periods is –0.732% reflecting, on average, less wealth loss for low-valuation acquisitions. When we differentiate either on the basis of target ownership status or method of payment, low-valuation acquisitions outperform on average high-valuation acquisitions confirming the return pattern reported using the P/E classification. Similar results are obtained when we examine two and three-year post-acquisition performance respectively (Tables 3.13 and 3.14). These findings suggest that low-valuation acquirers destroy significantly less long-term shareholder wealth than high-valuation acquirers. The initial, generally, positive reaction of the market to high-valuation acquirers suggests that the market learns only gradually that many of the mergers undertaken during high-valuation periods were imprudent. In contrast, when stock prices are low, acquisitions earn significantly lower positive announcement returns, but, in the long run, these acquisitions experience less negative abnormal returns. This suggests that the market learns over time that, despite its initial scepticism, these acquisitions were more worthwhile. For both high and low-valuation acquisitions the market reaction at the announcement stands in sharp contrast to the market's long run view of the firm's performance.

3.5.2.3. Control for Firm-Specific Misvaluation

In order to distinguish whether our findings are the result of the overall market's misvaluation or the misvaluation of the firm, we split the sample into high, medium and low book-to-market acquirers, and then divide each category into acquisitions that were undertaken in high, neutral and low-valuation periods. We investigate the performance of acquirers buying during high and low-valuation periods for each of the three book-to-market categories based on the book-to-market ratio one month prior to the acquisition announcement. Table 3.15 represents these results. We find that high, medium and low book-to-market acquirers all underperform when they buy during high-valuation periods for one-year post-acquisition period (-1.00%, -2.23%, -1.42%) respectively. Similar results are obtained for two and three years accordingly. Moreover, we report that high, medium and low book-to-market acquirers in high-valuation periods have, on average, lower long-run returns than the high, medium and low book-to-market ones acquiring in low valuation periods. Hence, such a finding indicates the importance of stock market valuations as key determinants of acquirer performance over and above a firm's misvaluation.

3.5.2.4. Price Reversals

A very important issue for examination is that the results we obtain are not just a manifestation of long-term reversals as suggested by Jegadeesh and Titman (1993). In particular, our finding that high valuation acquirers earn more positive abnormal returns surrounding the announcement date but lose more in the long run than low-valuation acquirers can be attributed to short-run persistence followed by long-term reversals. If the firms involved in acquisitions during high (low)-valuation periods experienced positive

(negative) or, in general, better performance (less negative) returns in the few months before the announcement of the acquisition, then the stock prices of these acquirers may be subject to a brief persistence followed by long-term negative (positive) returns.

Hence, in order to confirm that our results are not just capturing long-run stock price reversals we proceed with the following analysis. Firstly, the pre-event (pre-announcement) performance of each acquirer in the high and low valuation acquirer groups is calculated. In particular, for each acquirer, we determine the monthly average returns for the six months preceding the announcement of the acquisition. Secondly, high-valuation acquirers are ranked in order of their pre-event monthly average returns and placed into quintiles. The same procedure is followed for low-valuation acquirers. Subsequently we focus on acquirers that lie in the top and bottom quintiles of pre-event monthly average returns. As a result, we come up with the following four categories of acquirers: i) high-valuation acquirers who experienced the highest pre-event returns; ii) high-valuation acquirers who exhibited the lowest pre-event returns; iii) low-valuation acquirers who experienced the highest pre-event returns; and iv) low-valuation acquirers who experienced the lowest pre-event returns. The reason we focus on these extreme quintiles is that if our results are simply a manifestation of momentum and reversals and have nothing to do with the quality of acquisition decisions as we have claimed, then any support or contradiction of our interpretation will be the most obvious for acquirers who have experienced extremely high or low pre-event returns.

The results for this analysis are displayed in Table 3.16. We observe that high-valuation acquirers who gained high pre-event returns (5.58% on average) have one-year post-announcement average monthly abnormal returns of -1.51%. Similar results are obtained

for the two and three year-analyses respectively. This finding is consistent with long-term reversal while it is not possible to determine whether the long-term abnormal performance is solely due to reversals or whether the quality of the acquisition is a contributing factor. Noticeably, however, high-valuation acquirers who experienced negative pre-event returns also do poorly in the long-run (-2.58%). The negative average abnormal returns cannot be attributed to long-term reversals of stock returns since the acquirers had negative returns prior to the merger announcement. Moreover, low-valuation acquirers who earned positive pre-event returns have one-year average abnormal returns of 0.66%. This outperformance also cannot be attributed to price reversals. We therefore suggest that high-valuation acquirers are underperforming relative to low-valuation acquirers in the long-run because managers are making poorer acquisition decisions during high-valuation periods.

3.5.2.5. Herding Behaviour during Merger Waves

A possible interpretation for the worse long-run performance of high-valuation acquisitions can be attributed to herding behaviour during merger waves. To test for herding behaviour, we divide our sample of acquirers who bought during high-valuation periods into those who acquired early in the merger wave and those who acquired later. If herding behaviour is the explanation for the underperformance of acquirers buying in high-valuation periods, then the underperformance should be caused by the late-movers, which are firms that acquire after taking notice of an increase in acquisition activity. Early movers are defined as the first 10% of acquirers in any high-valuation period.[26] All other acquirers are classified as late movers. Table 3.17 (Panel A) presents one-, two- and three-year monthly average abnormal returns for early and late acquirers in the high-valuation

[26] We obtain the same quantitatively results when we define the early mover as the first 20% or 30% of acquirers in any high-valuation period.

periods. We find that early movers exhibit significantly less negative abnormal returns than late movers, as displayed in Panel B, which shows the mean difference between the two portfolios. This finding is consistent with the notion that acquirers who buy later in an acquisition wave are less careful in the evaluation of synergies possibly because they are following the herd.

3.6. Summary and Conclusions

Bearing in mind our findings from Chapter 2 that acquirers experience positive abnormal returns in the short-run when buying private targets and subsidiaries, but lose when buying public targets irrespective of the method of payment used, while in the long run negative performance is exhibited for acquisitions of any type of targets, we examine some possible factors for such results. Recent studies provide evidence that M&As come in waves and there is a positive correlation between merger activity and stock prices. In general, the literature suggests that market conditions, either stock market valuation or merger activity, influence bidders' performance. However, the question whether stock market valuation is the most important factor that drives the performance of acquiring firms or whether the results obtained source from the merger activity (or possibly other factors) always arises.

We examine a comprehensive sample of 3,512 UK domestic acquisitions from 1984 to May 6, 2004. We calculate Cumulative Average Residuals (CARs) for the five-day and 41-day period surrounding the takeover announcement and estimate the abnormal returns by using a modified market adjusted model (Ri-Rm). Our main finding is that the market valuation during the period of time that the acquisition takes place affects both the announcement returns and long-run performance of acquirers. In particular, we find that

announcement-day abnormal returns are significantly positive for acquisitions undertaken during high-valuation periods, while small and insignificantly positive abnormal returns are generated for acquisitions undertaken in low-valuation markets. This result still holds after controlling for the method of payment, the target public status, and the event window used or when employing a second classification for high, low and neutral-valuation markets. Thus, this finding suggests that the market appears indifferent to acquisitions undertaken during low-valuation periods. However, it welcomes and significantly rewards managers' initiatives to proceed to an acquisition in a period when the market is in a general misvaluation and there is not a very 'clear mind' from managers as they are likely to be infected by overconfidence and hubris.

However, this pattern is reversed when we examine the long-run performance of acquirers within a maximum of a 36-month post-acquisition period (we investigate bidder performance over one-, two- and three-year horizons). We divide takeover bids according to the target public status (public, private, subsidiary) and the method of payment (cash, stock, combination of cash and stock), and we examine the one-, two- and three-year post-acquisition share price performance of each subgroup by applying the well-known Calendar Time Analysis (CTA). Acquirers buying during high-valuation periods have worse share price performance that those making acquisitions during low-valuation periods. Hence, the overall market's valuation at the time of the merger announcement seems to impact the firm's post-merger performance. Results are independent of the method of payment and target ownership status. In addition, we examine the pre-event performance of acquirers six months preceding the acquisition event and provide evidence that the reversal of patterns for the acquirers is not simply a manifestation of short-term persistence and long-term reversals but mirrors the consequences of acquisitions during

specific periods of market valuation. Moreover, we research whether our findings are a result of market-wide or firm-specific misvaluation. We show, by doing a B/M test, the importance of stock market valuations as key determinants of acquirer performance over and above the firm's misvaluation.

Further, we investigate whether shareholders' wealth effects are driven by the merger activity or merger waves, indeed, follow market valuations. We find that bidders in cold-merger markets exhibit better performance than in hot-merger markets, inconsistent with the literature that finds correlation of high-valuation markets with intensive merger activity and larger abnormal returns. When we divide our sample in mutually exclusive portfolios of high, low and neutral valuation periods, we observe the usual picture of larger positive abnormal returns for acquisitions initiated during high-valuation periods irrespective of the fact that at the same time this period is classified as cold- or hot-merger period. Therefore, the results suggest that stock prices do matter leading us to reach a conclusion of stock-price driven acquisitions.

Finally, we test the potential explanation of manager herding behaviour for the bidder performance obtained. We provide evidence that acquisitions initiated later in an acquisition wave destroy more shareholders' wealth, probably due to less care taken in the evaluation of synergies because managers decide to follow the herd and are not left out of the 'merger game'. All in all, this chapter provides evidence that the overall market valuations impact shareholders' wealth and offers a more thorough inspection about the return pattern obtained in Chapter 2.

Table 3.1. Sample Statistics: Acquirer Market Equity and Transaction Value by Market Valuation, Form of Payment and Target Ownership Status

The table presents the mean and median market value of acquirers and the mean and median transaction value of the acquisition. The last three columns represent the total deal value and the percentage of total value of transaction and number of acquisitions respectively. The summary statistics are provided on the basis of a sample of 3512 acquisitions from January 1, 1984 to May 6, 2004. Acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Targets are UK public, private and subsidiary firms. Using monthly data from 1984 till May 2004, each month through this period is classified as a high- (low-) valuation month if the detrended market P/E of that month belongs to the top (bottom) half of all detrended P/Es above (below) the past five-year average. The summary statistics are further divided by target ownership status and method of payment. Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC.

	Number of Acquisitions	Mean Market Equity (£mln)	Mean Transaction Value (£mln)	Median Market Equity (£mln)	Median Transaction Value (£mln)	Total Deal Value (£mln)	% of Total Deal Value	% of Total Number of Acquisitions
All Acquisitions	3512	462.25	28.35	109.78	5	99559.45	100	100
High-Valuation Acquisitions	1014	581.38	33.35	127.57	6	33817.59	33.97	28.87
Neutral-Valuation Acquisitions	1796	428.57	28.15	101.43	4.6	50554.26	50.78	51.14
Low-Valuation Acquisitions	702	376.36	21.63	101.91	4.85	15187.6	15.25	19.99
Cash Acquisitions	1963	534.61	24.12	133.18	4.6	50554.26	50.78	51.14
Stock Acquisitions	189	414.41	107.78	68.96	9.3	20370.28	20.46	5.38
Combo Acquisitions	1360	364.45	23.41	86.73	5.25	31841.3	31.98	38.72
Public Acquisitions	247	922.76	178.13	201.04	37.44	43997.05	44.19	7.03
Private Acquisitions	1987	356.383	11.06	91.57	3.66	21985.5	22.08	56.58
Subsidiary Acquisitions	1278	537.85	26.27	133.05	6.09	33576.9	33.73	36.39
High-Valuation Cash Acquisitions	570	683.40	32.18	149.4	5.89	18345.44	54.25	56.21
High-Valuation Stock Acquisitions	67	472.35	91.76	67	11.3	6147.98	18.18	6.61
High-Valuation Combo Acquisitions	377	446.50	24.73	117.37	6.25	9324.17	27.57	37.18
Neutral-Valuation Cash Acquisitions	969	476.97	20.45	127.55	4	19812.2	39.19	53.95
Neutral-Valuation Stock Acquisitions	91	369.42	141.83	77.37	9.44	12906.09	25.53	5.07
Neutral-Valuation Combo Acquisitions	736	372.16	24.23	75.75	5.03	17835.97	35.28	40.98
Low-Valuation Cash Acquisitions	424	466.34	21.68	129.2	4.65	9190.23	60.51	60.40
Low-Valuation Stock Acquisitions	31	421.24	42.46	47.82	1.01	1316.21	8.67	4.42
Low-Valuation Combo Acquisitions	247	216.27	18.95	78.02	5.25	4681.16	30.82	35.18
High-Valuation Public Acquisitions	90	1126.40	179.75	215.63	51.03	16177.43	47.84	8.88
High-Valuation Private Acquisitions	559	524.77	14.52	117.04	4	8118.14	24.01	55.13
High-Valuation Subsidiary Acquisitions	365	533.69	26.09	136.29	7.67	9522.02	28.15	35.99
Neutral-Valuation Public Acquisitions	113	797.46	204.43	193.27	33	23100.89	45.70	6.29
Neutral-Valuation Private Acquisitions	1026	308.85	9.93	82.06	343	10184.41	20.15	57.13
Neutral-Valuation Subsidiary Acquisitions	657	552.08	26.28	128.53	5.95	17268.96	34.15	36.58
Low-Valuation Public Acquisitions	44	828.03	107.24	167.23	31.70	4178.73	27.51	6.27
Low-Valuation Private Acquisitions	402	243.54	9.16	79.91	3.65	3682.95	24.25	57.26
Low-Valuation Subsidiary Acquisitions	256	507.30	26.51	140.54	5.62	6785.92	48.24	36.47

Table 3.2. Short-Run [-2, +2] Cumulative Abnormal Returns (CARs) of Acquirers (P/E Classification)

The table presents the Cumulative Abnormal Returns (CARs) for bidders that acquired public, private and/or subsidiary UK targets 1984 and May 6, 2004. Cumulative abnormal returns are calculated for the five days [-2, +2] around the announcement day (day 0) of a takeover. Abnormal Returns are estimated using a modified market-adjusted model:

$$AR_{it} = R_{it} - R_{mt}$$

where R_{it} is the Return on firm i and R_{mt} is the Value Weighed Market Index Return (FT-All Share). All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Results in Panel A are comprised of bids for public, private, and subsidiary targets. Panels B, C and D are subsamples of Panel A; they contain bids undertaken during high, neutral and low valuation periods respectively. Using monthly data from 1984 till May 2004, each month through this period is classified as a high- (low-) valuation month if the detrended market P/E of that month belongs to the top (bottom) half of all detrended P/Es above (below) the past five-year average. The results for each panel are further divided by the method of payment. Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. The number of bids is reported below the mean. Panel E represents the differences in mean short-run CARs. [a] Denotes significance at the 1% level; [b] Denotes significance at the 5% level; [c] Denotes significance at the 10% level. T-stats are provided in parentheses.

	All	Cash	Stock	Combo
Panel A: All Acquisitions				
All Acquirers	0.79%[a]	0.73%[a]	-1.16%[c]	1.16%[a]
	3512	1963	189	1360
Public Targets	-1.59%[a]	-0.62%	-3.32%[a]	-1.34%
	247	105	69	73
Private Targets	0.96%[a]	0.53%[a]	-0.43%	1.47%[a]
	1987	899	93	995
Subsidiary Targets	0.99%[a]	1.05%[a]	1.86%	0.72%[b]
	1278	959	27	292

Table 3.2-*Continued*

Table 3.2-*Continued*

	All	Cash	Stock	Combo
Panel B: High-Valuation Acquisitions				
All Acquirers	1.58%[a]	1.22%[a]	0.97%	2.24%[a]
	1014	570	67	377
Public Targets	-0.86%	-0.01%	-1.82%	-0.94%
	90	34	28	28
Private Targets	2.18%[a]	1.49%[a]	2.13%[c]	2.88%[a]
	559	263	30	266
Subsidiary Targets	1.27%[a]	1.12%[a]	5.79%	1.29%[c]
	365	273	9	83
Panel C: Neutral-Valuation Acquisitions				
All Acquirers	0.56%[a]	0.69%[a]	-2.63%[a]	0.79%[a]
	1796	969	91	736
Public Targets	-1.88%[a]	-0.83%	-3.74%[b]	-1.72%[c]
	113	47	30	36
Private Targets	0.58%[a]	0.33%	-2.76%[c]	1.07%[a]
	1026	445	45	536
Subsidiary Targets	0.94%[a]	1.17%[a]	-0.18%	0.39%
	657	477	16	164

Table 3.2-*Continued*

Table 3.2-*Continued*

	All	Cash	Stock	Combo
Panel D: Low-Valuation Acquisitions				
All Acquirers	0.25%	0.16%	-1.43%	0.62%
	702	424	31	247
Public Targets	-2.30%[b]	-1.07%	-5.97%[b]	-1.12%
	44	24	11	9
Private Targets	0.22%	-0.30%	1.13%	0.65%
	402	191	18	193
Subsidiary Targets	0.73%[b]	0.71%[c]	0.50%	0.83%
	256	209	2	45

Panel E: Differences in mean Short-Run CARs	
High-Valuation minus Low Valuation	1.33%[a]
	(3.85)
Cash Acquisitions minus Stock Acquisitions	1.88%[a]
	(2.66)
High-Valuation Cash minus Low-Valuation Cash	1.06%[a]
	(2.70)
High-Valuation Stock minus Low-Valuation Stock	2.40%
	(1.32)
Public Targets minus Private Targets	-2.55%[a]
	(-5.08)
Public Targets minus Subsidiary Targets	-2.58%[a]
	(-5.14)
High-Valuation Public minus Low-Valuation Public	1.44%
	(1.09)
High-Valuation Private minus Low Valuation Private	1.96%[a]
	(3.95)
High-Valuation Subsidiary minus Low-Valuation Subsidiary	0.54%
	(1.10)

Table 3.3. Short-Run [-20, +20] Cumulative Abnormal Returns (CARs) of Acquirers (P/E Classification)

The table presents the Cumulative Abnormal Returns (CARs) for bidders that acquired public, private and/or subsidiary UK targets 1984 and May 6, 2004. Cumulative abnormal returns are calculated for the forty-one days [-20, +20] around the announcement day (day 0) of a takeover. Abnormal Returns are estimated using a modified market-adjusted model:

$$AR_{it} = R_{it} - R_{mt}$$

where R_{it} is the Return on firm i and R_{mt} is the Value Weighed Market Index Return (FT-All Share). All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Results in Panel A are comprised of bids for public, private, and subsidiary targets. Panels B, C and D are subsamples of Panel A; they contain bids undertaken during high, neutral and low valuation periods respectively. Using monthly data from 1984 till May 2004, each month through this period is classified as a high- (low-) valuation month if the detrended market P/E of that month belongs to the top (bottom) half of all detrended P/Es above (below) the past five-year average. The results for each panel are further divided by the method of payment. Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. The number of bids is reported below the mean. Panel E represents the differences in mean short-run CARs. [a] Denotes significance at the 1% level; [b] Denotes significance at the 5% level; [c] Denotes significance at the 10% level. T-stats are provided in parentheses.

	All	Cash	Stock	Combo
		Panel A: All Acquisitions		
All Acquirers	0.76%[a]	0.98%[a]	-0.49%	0.63%
	3512	1963	189	1360
Public Targets	-0.73%	-1.65%	-0.04%	-0.05%
	247	105	69	73
Private Targets	0.86%[b]	0.88%[c]	0.18%	0.90%
	1987	899	93	995
Subsidiary Targets	0.90%[b]	1.35%[a]	-3.96%	-0.11%
	1278	959	27	292

Table 3.3-*Continued*

Table 3.3-*Continued*

	All	Cash	Stock	Combo
Panel B: High-Valuation Acquisitions				
All Acquirers	3.07%[a]	3.34%[a]	5.58%[c]	2.21%[c]
	1014	570	67	377
Public Targets	1.94%	0.28%	2.90%	3.00%
	90	34	28	28
Private Targets	4.06%[a]	4.19%[a]	5.01%	3.82%[b]
	559	263	30	266
Subsidiary Targets	1.82%[b]	2.89%[a]	15.79%	-3.21%[c]
	365	273	9	83
Panel C: Neutral-Valuation Acquisitions				
All Acquirers	-0.22%	0.27%	-5.47%[a]	-0.22%
	1796	969	91	736
Public Targets	-1.22%	-1.01%	-0.84%	-1.81%
	113	47	30	36
Private Targets	-0.39%	0.07%	-4.51%[c]	-0.43%
	1026	445	45	536
Subsidiary Targets	0.21%	0.57%	-16.85%[b]	0.84%
	657	477	16	164

Table 3.3-*Continued*

Table 3.3-*Continued*

	All	Cash	Stock	Combo
Panel D: Low-Valuation Acquisitions				
All Acquirers	-0.04%	-0.58%	1.00%	0.76%
	702	424	31	247
Public Targets	-4.93%[a]	-5.64%[a]	-5.37%	-2.49%
	44	24	11	9
Private Targets	-0.40%	-1.79%	3.85%	0.59%
	402	191	18	193
Subsidiary Targets	1.37%[c]	1.11%	10.37%	2.17%
	256	209	2	45

Panel E: Differences in mean Short-Run CARs	
High-Valuation minus Low Valuation	3.10%[a]
	(3.61)
Cash Acquisitions minus Stock Acquisitions	1.47%
	(0.90)
High-Valuation Cash minus Low-Valuation Cash	3.91%[a]
	(3.79)
High-Valuation Stock minus Low-Valuation Stock	4.58%
	(1.09)
Public Targets minus Private Targets	-1.59%[c]
	(-1.68)
Public Targets minus Subsidiary Targets	-1.63%[c]
	(-1.71)
High-Valuation Public minus Low-Valuation Public	6.87%[a]
	(2.76)
High-Valuation Private minus Low Valuation Private	4.46%[a]
	(3.42)
High-Valuation Subsidiary minus Low-Valuation Subsidiary	0.46%
	(0.41)

Table 3.4. Short-Run [-2, +2] Cumulative Abnormal Returns (CARs) of Acquirers (TOTMKUK Classification)

The table presents the Cumulative Abnormal Returns (CARs) for bidders that acquired public, private and/or subsidiary UK targets 1984 and May 6, 2004. Cumulative abnormal returns are calculated for the five days [-2, +2] around the announcement day (day 0) of a takeover. Abnormal Returns are estimated using a modified market-adjusted model:

$$AR_{it} = R_{it} - R_{mt}$$

where R_{it} is the Return on firm i and R_{mt} is the Value Weighed Market Index Return (FT-All Share). All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Results in Panel A are comprised of bids for public, private, and subsidiary targets. Panels B, C and D are subsamples of Panel A; they contain bids undertaken during high, neutral and low valuation periods respectively. Using monthly data from 1984 till May 2004, each month through this period is classified as a high- (low-) valuation month if the detrended TOTMKUK index level of that month belongs to the top (bottom) half of all detrended TOTMKUK levels above (below) the past five-year average. The results for each panel are further divided by the method of payment. Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. The number of bids is reported below the mean. Panel E represents the differences in mean short-run CARs. [a] Denotes significance at the 1% level; [b] Denotes significance at the 5% level; [c] Denotes significance at the 10% level. T-stats are provided in parentheses.

	All	Cash	Stock	Combo
Panel A: All Acquisitions				
All Acquirers	0.79%[a]	0.73%[a]	-1.16%[c]	1.16%[a]
	3512	1963	189	1360
Public Targets	-1.59%[a]	-0.62%	-3.32%[a]	-1.34%
	247	105	69	73
Private Targets	0.96%[a]	0.53%[a]	-0.43%	1.47%[a]
	1987	899	93	995
Subsidiary Targets	0.99%[a]	1.05%[a]	1.86%	0.72%[b]
	1278	959	27	292

Table 3.4-*Continued*

Table 3.4-*Continued*

	All	Cash	Stock	Combo
Panel B: High-Valuation Acquisitions				
All Acquirers	1.03%[a]	0.82%[a]	-0.24%	1.44%[a]
	1336	717	58	561
Public Targets	-1.42%[c]	0.17%	-3.13%	-2.14%[b]
	101	43	27	31
Private Targets	1.44%[a]	0.82%[a]	1.45%	1.95%[a]
	784	343	26	415
Subsidiary Targets	0.88%[a]	0.89%[a]	6.58%[c]	0.58%
	451	331	5	115

	All	Cash	Stock	Combo
Panel C: Neutral-Valuation Acquisitions				
All Acquirers	0.81%[a]	0.90%[a]	-1.50%	1.14%[a]
	1380	762	105	513
Public Targets	-1.18%[c]	-1.40%[b]	-2.96%[b]	1.29%
	105	41	35	29
Private Targets	0.81%[a]	0.77%[a]	-1.69%	1.21%[a]
	750	333	52	365
Subsidiary Targets	1.20%[a]	1.26%[a]	-1.91%	0.90%[c]
	525	388	18	119

Table 3.4-*Continued*

Table 3.4-*Continued*

	All	Cash	Stock	Combo
Panel D: Low-Valuation Acquisitions				
All Acquirers	0.36%[c]	0.31%	-1.83%	0.64%[c]
	796	484	26	286
Public Targets	-3.04%[b]	-0.71%	-5.81%	-5.32%
	41	21	7	13
Private Targets	0.38%	-0.26%	0.68%	1.01%[b]
	453	223	15	215
Subsidiary Targets	0.81%[a]	0.94%[a]	-4.25%	0.61%
	302	240	4	58

Panel E: Differences in mean Short-Run CARs	
High-Valuation minus Low Valuation	0.67%[b]
	(2.27)
Cash Acquisitions minus Stock Acquisitions	1.88%[a]
	(2.66)
High-Valuation Cash minus Low-Valuation Cash	0.50%
	(1.45)
High-Valuation Stock minus Low-Valuation Stock	1.59%
	(0.83)
Public Targets minus Private Targets	-2.55%[a]
	(-5.08)
Public Targets minus Subsidiary Targets	-2.58%[a]
	(-5.14)
High-Valuation Public minus Low-Valuation Public	1.62%
	(1.12)
High-Valuation Private minus Low-Valuation Private	1.06%[a]
	(2.58)
High-Valuation Subsidiary minus Low-Valuation Subsidiary	0.07%
	(0.17)

Table 3.5. Short-Run [-20, +20] Cumulative Abnormal Returns (CARs) of Acquirers (TOTMKUK Classification)

The table presents the Cumulative Abnormal Returns (CARs) for bidders that acquired public, private and/or subsidiary UK targets 1984 and May 6, 2004. Cumulative abnormal returns are calculated for the forty-one days [-20, +20] around the announcement day (day 0) of a takeover. Abnormal Returns are estimated using a modified market-adjusted model:

$$AR_{it} = R_{it} - R_{mt}$$

where R_{it} is the Return on firm i and R_{mt} is the Value Weighed Market Index Return (FT-All Share). All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Results in Panel A are comprised of bids for public, private, and subsidiary targets. Panels B, C and D are subsamples of Panel A; they contain bids undertaken during high, neutral and low valuation periods respectively. Using monthly data from 1984 till May 2004, each month through this period is classified as a high- (low-) valuation month if the detrended TOTMKUK index level of that month belongs to the top (bottom) half of all detrended TOTMKUK levels above (below) the past five-year average. The results for each panel are further divided by the method of payment. Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. The number of bids is reported below the mean. Panel E represents the differences in mean short-run CARs. [a] Denotes significance at the 1% level; [b] Denotes significance at the 5% level; [c] Denotes significance at the 10% level. T-stats are provided in parentheses.

	All	Cash	Stock	Combo
Panel A: All Acquisitions				
All Acquirers	0.76%[a]	0.98%[a]	-0.49%	0.63%
	3512	1963	189	1360
Public Targets	-0.73%	-1.65%	-0.04%	-0.05%
	247	105	69	73
Private Targets	0.86%[b]	0.88%[c]	0.18%	0.90%
	1987	899	93	995
Subsidiary Targets	0.90%[b]	1.35%[a]	-3.96%	-0.11%
	1278	959	27	292

Table 3.5-*Continued*

Table 3.5-*Continued*

	All	Cash	Stock	Combo
Panel B: High-Valuation Acquisitions				
All Acquirers	0.60%	0.57%	1.27%	0.57%
	1336	717	58	561
Public Targets	-0.16%	-1.14%	-1.21%	2.12%
	101	43	27	31
Private Targets	1.44%[c]	1.31%	2.67%	1.47%
	784	343	26	415
Subsidiary Targets	-0.68%	0.02%	7.31%	-3.06%[b]
	451	331	5	115

	All	Cash	Stock	Combo
Panel C: Neutral-Valuation Acquisitions				
All Acquirers	1.09%[a]	1.65%[a]	-0.47%	0.57%
	1380	762	105	513
Public Targets	-0.09%	-1.66%	0.89%	0.97%
	105	41	35	29
Private Targets	0.90%[c]	1.90%[a]	-0.47%	0.19%
	750	333	52	365
Subsidiary Targets	1.58%[a]	1.78%[a]	-3.13%	1.65%
	525	388	18	119

Table 3.5-*Continued*

Table 3.5-*Continued*

	All	Cash	Stock	Combo
Panel D: Low-Valuation Acquisitions				
All Acquirers	0.48%	0.52%	-4.49%	0.86%
	796	484	26	286
Public Targets	-3.79%[c]	-2.67%	-0.22%	-7.50%[c]
	41	21	7	13
Private Targets	-0.21%	-1.29%	-1.88%	1.02%
	453	223	15	215
Subsidiary Targets	2.09%[a]	2.48%[a]	-21.77%	2.15%
	302	240	4	58

Panel E: Differences in mean Short-Run CARs	
High-Valuation minus Low Valuation	0.12%
	(0.16)
Cash Acquisitions minus Stock Acquisitions	1.47%
	(0.90)
High-Valuation Cash minus Low-Valuation Cash	0.05%
	(0.05)
High-Valuation Stock minus Low-Valuation Stock	5.76%
	(0.95)
Public Targets minus Private Targets	-1.59%[c]
	(-1.68)
Public Targets minus Subsidiary Targets	-1.63%[c]
	(-1.71)
High-Valuation Public minus Low-Valuation Public	3.63%
	(1.36)
High-Valuation Private minus Low-Valuation Private	1.65%
	(1.54)
High-Valuation Subsidiary minus Low-Valuation Subsidiary	-2.78%[a]
	(-2.58)

Table 3.6. Short-Run [-2, +2], [-20, +20] Cumulative Abnormal Returns (CARs) of Acquirers in Hot Merger Markets

The table presents the Cumulative Abnormal Returns (CARs) for bidders that acquired public, private and/or subsidiary UK targets 1984 and May 6, 2004. Cumulative abnormal returns are calculated for the five days [-2, +2] and forty-one [-20, +20] days around the announcement day (day 0) of a takeover. Abnormal Returns are estimated using a modified market-adjusted model:

$$AR_{it} = R_{it} - R_{mt}$$

where R_{it} is the Return on firm i and R_{mt} is the Value Weighed Market Index Return (FT-All Share). All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Results in Panel A and B are comprised of bids for public, private, and subsidiary targets and represent the 5-day and 41-day CARs respectively. Using monthly data from 1984 till May 2004, each month is classified as a hot- (cold-) takeover month if the number of acquisitions of this month lies above (below) the top (bottom) 30% of the already ranked months with more (less) acquisitions. The results for each panel are further divided by the method of payment. Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. The number of bids is reported below the mean. Panels C and D represent the differences in mean short-run CARs. [a] Denotes significance at the 1% level; [b] Denotes significance at the 5% level; [c] Denotes significance at the 10% level. T-stats are provided in parentheses.

	All	Cash	Stock	Combo
Panel A: All Acquisitions [-2, +2]				
All Acquirers	0.77%[a]	0.62%[a]	-0.82%	1.16%[a]
	1673	938	77	658
Public Targets	-1.30%[c]	-0.09%	-3.42%[c]	-1.34%
	121	57	32	32
Private Targets	1.00%[a]	0.54%[b]	0.70%	1.46%[a]
	999	470	37	492
Subsidiary Targets	0.80%[a]	0.81%[a]	2.57%	0.66%
	553	411	8	134

Table 3.6-*Continued*

	All	Cash	Stock	Combo
Panel B: All Acquisitions [-20, +20]				
All Acquirers	0.02%	0.28%	-2.54%	-0.05%
	1673	938	77	658
Public Targets	-0.89%	-2.12%	-0.31%	0.72%
	121	57	32	32
Private Targets	0.69%	1.01%	-1.70%	0.58%
	999	470	37	492
Subsidiary Targets	-1.00%	-0.22%	-15.36%	-2.54%[b]
	553	411	8	134

Panel C: Differences in mean Short-Run CARs [-2, +2]	
High-Valuation minus Low Valuation	1.98%[a]
	(2.86)
Cash Acquisitions minus Stock Acquisitions	1.44%
	(1.15)
High-Valuation Cash minus Low-Valuation Cash	2.20%[b]
	(2.53)
High-Valuation Stock minus Low-Valuation Stock	-2.59%
	(-0.55)
Public Targets minus Private Targets	-2.30%[a]
	(0.46)
Public Targets minus Subsidiary Targets	-2.09%[a]
	(-2.81)
High-Valuation Public minus Low-Valuation Public	-0.42%
	(-0.25)
High-Valuation Private minus Low-Valuation Private	2.96%[a]
	(2.97)
High-Valuation Subsidiary minus Low-Valuation Subsidiary	0.75%
	(0.79)

Panel D: Differences in mean Short-Run CARs [-20, +20]	
High-Valuation minus Low Valuation	1.30%
	(1.01)
Cash Acquisitions minus Stock Acquisitions	2.82%
	(1.07)
High-Valuation Cash minus Low-Valuation Cash	2.67%[c]
	(1.77)
High-Valuation Stock minus Low-Valuation Stock	0.47%
	(0.07)
Public Targets minus Private Targets	-1.59%
	(-1.06)
Public Targets minus Subsidiary Targets	0.11%
	(0.07)
High-Valuation Public minus Low-Valuation Public	6.26%[c]
	(1.78)
High-Valuation Private minus Low Valuation Private	1.37%
	(0.78)
High-Valuation Subsidiary minus Low-Valuation Subsidiary	0.18%
	(0.08)

Table 3.7. Short-Run [-2, +2], [-20, +20] Cumulative Abnormal Returns (CARs) of Acquirers in Cold Merger Markets

The table presents the Cumulative Abnormal Returns (CARs) for bidders that acquired public, private and/or subsidiary UK targets 1984 and May 6, 2004. Cumulative abnormal returns are calculated for the five days [-2, +2] and forty-one [-20, +20] days around the announcement day (day 0) of a takeover. Abnormal Returns are estimated using a modified market-adjusted model:

$$AR_{it} = R_{it} - R_{mt}$$

where R_{it} is the Return on firm i and R_{mt} is the Value Weighed Market Index Return (FT-All Share). All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Results in Panel A and B are comprised of bids for public, private, and subsidiary targets and represent the 5-day and 41-day CARs respectively. Using monthly data from 1984 till May 2004, each month is classified as a hot- (cold-) takeover month if the number of acquisitions of this month lies above (below) the top (bottom) 30% of the already ranked months with more (less) acquisitions. The results for each panel are further divided by the method of payment. Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. The number of bids is reported below the mean. Panels C and D represent the differences in mean short-run CARs. [a] Denotes significance at the 1% level; [b] Denotes significance at the 5% level; [c] Denotes significance at the 10% level. T-stats are provided in parentheses.

	All	Cash	Stock	Combo
Panel A: All Acquisitions [-2, +2]				
All Acquirers	1.14%[a]	1.05%[a]	-1.30%	1.85%[a]
	519	311	38	170
Public Targets	-1.73%	-0.30%	-0.88%	-3.91%
	41	13	14	14
Private Targets	0.91%[a]	0.14%	-3.32%	2.29%[a]
	280	141	15	124
Subsidiary Targets	2.07%[a]	1.99%[a]	1.40%	2.65%[b]
	198	157	9	32

Table 3.7 *–Continued*

	All	Cash	Stock	Combo
Panel B: All Acquisitions [-20, +20]				
All Acquirers	1.59%[b]	0.96%	2.27%	2.59%[a]
	519	311	38	170
Public Targets	3.44%	3.95%	6.35%	0.06%
	41	13	14	14
Private Targets	1.22%	0.15%	2.11%	2.32%[b]
	280	141	15	124
Subsidiary Targets	1.73%	1.44%	-3.80%	4.71%[c]
	198	157	9	32

Panel C: Differences in mean Short-Run CARs [-2, +2]	
High-Valuation minus Low Valuation	-0.61%
	(-1.00)
Cash Acquisitions minus Stock Acquisitions	2.36%[c]
	(2.00)
High-Valuation Cash minus Low-Valuation Cash	-0.17%
	(-0.27)
High-Valuation Stock minus Low-Valuation Stock	0.31%
	(0.17)
Public Targets minus Private Targets	-2.64%[b]
	(-2.25)
Public Targets minus Subsidiary Targets	-3.80%[a]
	(-3.20)
High-Valuation Public minus Low-Valuation Public	2.16%
	(0.70)
High-Valuation Private minus Low-Valuation Private	-0.72%
	(-0.93)
High-Valuation Subsidiary minus Low-Valuation Subsidiary	-0.81%
	(0.78)

Panel D: Differences in mean Short-Run CARs [-20, +20]	
High-Valuation minus Low Valuation	2.91%[c]
	(1.91)
Cash Acquisitions minus Stock Acquisitions	-1.31%
	(-0.32)
High-Valuation Cash minus Low-Valuation Cash	5.32%[a]
	(2.65)
High-Valuation Stock minus Low-Valuation Stock	-7.58%
	(-1.21)
Public Targets minus Private Targets	2.22%
	(0.94)
Public Targets minus Subsidiary Targets	1.71%
	(0.68)
High-Valuation Public minus Low-Valuation Public	4.19%
	(0.77)
High-Valuation Private minus Low-Valuation Private	2.16%
	(1.03)
High-Valuation Subsidiary minus Low-Valuation Subsidiary	2.41%
	(1.07)

Table 3.8. Short-Run [-2, +2], [-20, +20] CARs Interrelationships of Acquirers in High/Low Valuation and Hot/Cold Merger Markets

The table presents the Cumulative Abnormal Returns (CARs) for bidders that acquired public, private and/or subsidiary UK targets 1984 and May 6, 2004. Cumulative abnormal returns are calculated for the five days [-2, +2] and forty-one [-20, +20] days around the announcement day (day 0) of a takeover. Abnormal Returns are estimated using a modified market-adjusted model:

$$AR_{it} = R_{it} - R_{mt}$$

where R_{it} is the Return on firm i and R_{mt} is the Value Weighed Market Index Return (FT-All Share). All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Results in Panels A, B, and C are comprised of bids for public, private, and subsidiary targets for high, neutral and low-valuation market respectively and represent the five-day CARs. Correspondingly, results in Panels D, E, and F contain bids during high, neutral and low-valuation and hot merger market respectively and represent the forty-one-day CARs. Results in Panels G, H, and I include bids during high, neutral and low-valuation and cold merger market respectively and represent the five-day CARs. In correspondence, results in Panels J, K, and L contain bids during high, neutral and low-valuation market respectively and represent the forty-one-day CARs. Using monthly data from 1984 till May 2004, each month through this period is classified as a high- (low-) valuation month if the detrended market P/E of that month belongs to the top (bottom) half of all detrended P/Es above (below) the past five-year average. In correspondence, each month is classified as a hot- (cold-) takeover month if the number of acquisitions of this month lies above (below) the top (bottom) 30% of the already ranked months with more (less) acquisitions The results for each panel are further divided by the method of payment. Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. The number of bids is reported below the mean. Panels M and N represent the differences in mean short-run CARs. [a] Denotes significance at the 1% level; [b] Denotes significance at the 5% level; [c] Denotes significance at the 10% level. T-stats are provided in parentheses.

	All	Cash	Stock	Combo
Panel A: High Valuation-Hot Merger Market [-2, +2]				
All Acquirers	1.55%[a]	1.26%[a]	-0.28%	2.20%[a]
	734	416	36	282
Public Targets	-1.94%	0.14%	-4.33%	-2.86%[c]
	61	27	17	17
Private Targets	2.37%[a]	1.59%[a]	3.47%[b]	3.01%[a]
	419	195	18	206
Subsidiary Targets	1.03%[b]	1.08%[b]	1.12%	0.83%
	254	194	1	59

Table 3.8 –*Continued*

Table 3.8 –*Continued*

	All	Cash	Stock	Combo
Panel B: Neutral Valuation-Hot Merger Market [-2, +2]				
All Acquirers	0.26%	0.33%	-1.91%	0.39%
	806	433	35	338
Public Targets	-0.43%	-0.21%	-1.82%	0.38%
	48	21	12	15
Private Targets	0.12%	0.18%	-4.03%	0.32%
	496	225	16	255
Subsidiary Targets	0.66%[b]	0.57%	2.78	0.67%
	262	187	7	68
Panel C: Low Valuation-Hot Merger Market [-2, +2]				
All Acquirers	-0.43%	-0.94%	2.31%	0.33%
	133	89	6	38
Public Targets	-1.52%	-0.47%	-4.67%[c]	-
	12	9	3	-
Private Targets	-0.59%	-1.93%	9.30%	0.61%
	84	50	3	31
Subsidiary Targets	0.27%	0.55%	-	-0.90%
	37	30	-	7

Table 3.8 –*Continued*

Table 3.8 –*Continued*

	All	Cash	Stock	Combo
Panel D: High Valuation-Hot Merger Market [-20, +20]				
All Acquirers	1.71%[b]	2.15%[a]	-0.74%	1.35%
	734	416	36	282
Public Targets	0.11%	-1.69%	1.09%	2.01%
	61	27	17	17
Private Targets	2.97%[b]	3.49%[a]	-1.95%	2.91%
	419	195	18	206
Subsidiary Targets	0.0029%	1.35%	-9.97%	-4.26%[c]
	254	194	1	59
Panel E: Neutral Valuation-Hot Merger Market [-20, +20]				
All Acquirers	-1.58%[a]	-1.36%[b]	-4.63%	-1.55%[b]
	806	433	35	338
Public Targets	-0.86%	-1.25%	-0.32%	-0.73%
	48	21	12	15
Private Targets	-1.38%[b]	-0.77%	-2.82%	1.83%[b]
	496	225	16	255
Subsidiary Targets	-2.09%[b]	-2.08%[c]	-16.13%	-0.67%
	262	187	7	68

Table 3.8 –*Continued*

Table 3.8 –*Continued*

	All	Cash	Stock	Combo
Panel F: Low Valuation-Hot Merger Market [-20, +20]				
All Acquirers	0.41%	-0.51%	-1.21%	2.81%
	133	89	6	38
Public Targets	-6.14%[b]	-5.44%	-8.24%	-
	12	9	3	-
Private Targets	1.59%	-0.69%	5.82%	4.87%[b]
	84	50	3	31
Subsidiary Targets	-0.17%	1.26%	-	-6.30%[b]
	37	30	-	7
Panel G: High Valuation-Cold Merger Market [-2, +2]				
All Acquirers	0.85%[b]	0.69%[c]	0.04%	1.72%[c]
	112	64	19	29
Public Targets	-0.01%	1.46%	-0.69%	0.50%
	15	2	8	5
Private Targets	0.47%	-0.15%	-2.57%	2.72%[b]
	51	29	6	16
Subsidiary Targets	1.55%[b]	1.38%[b]	4.34%	0.46%
	46	33	5	8

Table 3.8 –*Continued*

Table 3.8 –*Continued*

	All	Cash	Stock	Combo
Panel H: Neutral Valuation-Cold Merger Market [-2, +2]				
All Acquirers	0.99%[b]	1.40%[a]	-3.74%	1.12%
	203	130	13	60
Public Targets	-2.97%	-0.66%	-1.79%	-6.84%
	18	8	4	6
Private Targets	0.78%	0.13%	-5.37%	2.35%[a]
	103	52	6	45
Subsidiary Targets	2.12%[a]	2.58%[a]	-3.10%	0.25%
	82	70	3	9

	All	Cash	Stock	Combo
Panel I: Low Valuation-Cold Merger Market [-20, +20]				
All Acquirers	1.46%[a]	0.87%[c]	-0.27%	2.44%[a]
	204	117	6	81
Public Targets	-2.17%	-0.52%	0.17%	-5.39%
	8	3	2	3
Private Targets	1.19%[b]	0.29%	-0.73%	2.14%[b]
	126	60	3	63
Subsidiary Targets	2.35%[a]	1.58%[c]	0.20%	5.27%[a]
	70	54	1	15

Table 3.8 –*Continued*

Table 3.8 –*Continued*

	All	Cash	Stock	Combo
Panel J: High Valuation-Cold Merger Market [-20, +20]				
All Acquirers	4.48%[a]	4.48%[a]	7.87%[b]	2.25%
	112	64	19	29
Public Targets	8.43%[b]	14.36%	7.49%	7.55%
	15	2	8	5
Private Targets	3.19%[b]	3.80%[c]	3.25%	2.08%
	51	29	6	16
Subsidiary Targets	4.61%[a]	4.48%[a]	14.00%	-0.72%
	46	33	5	8
Panel K: Neutral Valuation-Cold Merger Market [-20, +20]				
All Acquirers	0.02%	0.84%	-11.98%	0.84%
	203	130	13	60
Public Targets	-1.06%	1.69%	0.61%	-5.85%
	18	8	4	6
Private Targets	0.46%	-0.15%	-2.75%	1.59%
	103	52	6	45
Subsidiary Targets	-0.29%	1.48%	-47.22%	1.56%
	82	70	3	9

Table 3.8 –*Continued*

	All	Cash	Stock	Combo
Panel L: Low Valuation-Cold Merger Market [-20, +20]				
All Acquirers	1.56%	-0.84%	15.45%[b]	4.00%[b]
	204	117	6	81
Public Targets	4.23%	3.04%	13.26%	-0.59%
	8	3	2	3
Private Targets	1.04%	-1.35%	9.57%[c]	2.91%
	126	60	3	63
Subsidiary Targets	2.20%	-0.48%	37.44%	9.51%[b]
	70	54	1	15

Panel M: Differences in mean Short-Run CARs [-2, +2]	
Hot Merger Market minus Cold Merger Market	-0.37%
	(-1.20)
Hot High-Valuation minus Cold High-Valuation	0.69%
	(1.36)
Hot Low-Valuation minus Cold Low-Valuation	-1.89%[b]
	(-2.46)
Hot High-Valuation minus Cold Low-Valuation	0.09%
	(0.16)
Hot High Cash minus Cold Low Cash	0.39%
	(0.65)
Hot High Stock minus Cold Low Stock	-0.01%
	(-0.00)
Hot High Public minus Cold Low Public	0.23%
	(0.07)
Hot High Private minus Cold Low Private	1.18%
	(1.60)
Hot High Subsidiary minus Cold Low Subsidiary	-1.32%
	(-1.56)

Panel N: Differences in mean Short-Run CARs [-20, +20]	
Hot Merger Market minus Cold Merger Market	-1.57%[c]
	(-1.91)
Hot High-Valuation minus Cold High-Valuation	-2.77%[b]
	(-2.16)
Hot Low-Valuation minus Cold Low-Valuation	-1.16%
	(-0.76)
Hot High-Valuation minus Cold Low-Valuation	0.14%
	(0.10)
Hot High Cash minus Cold Low Cash	2.99%[c]
	(1.70)
Hot High Stock minus Cold Low Stock	-16.18%[b]
	(-2.33)
Hot High Public minus Cold Low Public	-4.12%
	(-0.86)
Hot High Private minus Cold Low Private	1.93%
	(0.97)
Hot High Subsidiary minus Cold Low Subsidiary	-2.20%
	(-1.21)

Table 3.9. 1-Year Calendar-Time Analysis of Long-Run Excess Returns using Fama-French (1993) 3-Factor Model (P/E Classification)

This table presents the OLS estimates of abnormal returns to merger portfolios according to the Fama and French 3-factor model. Panel 1 represents the overall portfolio consisting of 2918 successful domestic takeover bids that took place over the period 1984-2000 as identified from the *Securities Data Corporation's* (SDC) *Global Financing* database. Panels 2-4 are comprised of the results we obtain during high-, neutral- and low-valuation market respectively. Using monthly data from 1984 till May 2004, each month through this period is classified as a high- (low-) valuation month if the detrended market P/E of that month belongs to the top (bottom) half of all detrended P/Es above (below) the past five-year average. In Panel A, calendar time regressions are performed on the basis of target public status (Public, Private, Subsidiary). In Panel B calendar time abnormal returns are formed according to the method of payment (Cash, Stock, Combination of Cash and Stock). Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. Acquirers enter the portfolio on the effective day of the successful takeover and remain for 12 months. Portfolios are rebalanced each month to include firms that have just completed a takeover. We estimate the calendar-time return under the Fama-French model with the following regression:

$$R_{pt} - R_{ft} = a_i + \beta_i(R_{mt} - R_{ft}) + s_i SMB_t + h_i HML_t + \varepsilon_{it}$$

Where R_{pt} is the simple average monthly return on the calendar-time portfolio, R_{ft} is the monthly return on three-month Treasury bills, R_{mt} is the return on a value weighted market index, SMB_t is the zero-cost portfolio capturing the difference in the returns of a value weighted portfolio of small stocks and large stocks, and HML_t is the difference in the returns to a value-weighted portfolio of high book-to market stocks and low book-to-market stocks. In addition, β_i, s_i and h_i are regression parameters specific to the portfolio and ε_{it} is the error term. The t-statistics are displayed in brackets. The t-statistics are in (brackets) and calculated on the basis of Andrews' (1991) heteroscedasticity and autocorrelation consistent standard errors. The numbers in percentage represent the reported FF α, which is the average of the individual, firm-specific intercepts. Panel 5 contains the differences in mean one-year calendar time abnormal returns. [a] Denotes significance at the 1% level; [b] Denotes significance at the 5% level; [c] Denotes significance at the 10% level.

Panel 1. All Acquisitions	**Panel A: All-Target Public Status**			
	All	**Public**	**Private**	**Subsidiary**
Intercept	-1.00%[a]	-1.75%[a]	-1.06%[a]	-1.05%[a]
Rm-Rf	1.185	1.212	1.210	1.192
	[38.9]	[16.2]	[33.7]	[28.4]
SMB	0.788	0.650	0.882	0.723
	[19.1]	[6.5]	[18.1]	[13.1]
HML	0.181	0.560	0.04758	0.344
	[3.2]	[4.2]	[0.7]	[4.6]
R^2	89%	58%	87%	82%
	Panel B: Method of Payment			
	Cash	**Stock**	**Combo**	
Intercept	-0.976%[a]	-1.79%[a]	-0.906%[a]	
Rm-Rf	1.210	1.257	1.209	
	[30.1]	[15.3]	[24.1]	
SMB	0.685	0.944	0.847	
	[12.7]	[8.4]	[12.8]	
HML	0.373	-0.404	0.0934	
	[5.2]	[2.7]	[1.04]	
R^2	82%	60%	78%	

Table 3.9 –*Continued*

Table 3.9 –*Continued*

Panel 2. High-Valuation Acquisitions	**Panel A: All-Target Public Status**			
	All	**Public**	**Private**	**Subsidiary**
Intercept	-1.31%[a]	-1.76%[a]	-1.21%[a]	-1.03%[a]
Rm-Rf	1.201	1.304	1.223	1.171
	[25.9]	[17.1]	[23.04]	[17.19]
SMB	0.746	0.581	0.800	0.734
	[11.6]	[5.5]	[10.9]	[7.8]
HML	0.225	0.566	0.07167	0.431
	[2.9]	[4.6]	[0.8]	[3.8]
R^2	88%	77%	86%	76%
	Panel B: Method of Payment			
	Cash	**Stock**	**Combo**	
Intercept	-1.22%[a]	-2.33%[a]	-1.14%[a]	
Rm-Rf	1.170	1.262	1.267	
	[30.1]	[9.7]	[19.3]	
SMB	0.694	0.798	0.748	
	[12.7]	[4.4]	[8.3]	
HML	0.425	-0.265	0.01809	
	[5.2]	[-1.3]	[0.17]	
R^2	83%	58%	81%	

Panel 3. Neutral-Valuation Acquisitions	**Panel A: All-Target Public Status**			
	All	**Public**	**Private**	**Subsidiary**
Intercept	-0.855%[a]	-2.05%[b]	-0.619%[a]	-1.12%[a]
Rm-Rf	1.151	1.246	1.163	1.185
	[33.3]	[11.1]	[26.4]	[21.2]
SMB	0.892	0.691	1.045	0.803
	[17.5]	[4.2]	[16.2]	[10.03]
HML	-0.0533	0.455	-0.248	0.04239
	[-0.7]	[2.02]	[-2.6]	[0.366]
R^2	87%	43%	82%	74%
	Panel B: Method of Payment			
	Cash	**Stock**	**Combo**	
Intercept	-0.988%[a]	-1.60%[c]	-0.482%[b]	
Rm-Rf	1.153	1.488	1.136	
	[28.7]	[8.6]	[18.6]	
SMB	0.785	1.399	0.979	
	[13.6]	[5.3]	[11.3]	
HML	0.227	-2.212	0.002137	
	[2.5]	[0.15]	[0.01]	
R^2	83%	42%	71%	

Table 3.9 –*Continued*

Table 3.9 –*Continued*

Panel 4. Low-Valuation Acquisitions	**Panel A: All-Target Public Status**			
	All	**Public**	**Private**	**Subsidiary**
Intercept	-1.30%[a]	-0.466%	-1.66%[a]	-0.726%[b]
Rm-Rf	1.345	1.162	1.223	1.306
	[13.05]	[10.1]	[9.8]	[11.8]
SMB	0.762	0.869	0.810	0.753
	[5.4]	[5.4]	[4.8]	[5.1]
HML	-0.253	-0.072	-0.528	0.301
	[-0.851]	[-0.189]	[-1.473]	[0.910]
R^2	63%	70%	51%	61%
	Panel B: Method of Payment			
	Cash	**Stock**	**Combo**	
Intercept	-0.971%[b]	-1.17%	-0.641%[b]	
Rm-Rf	1.505	1.142	0.963	
	[11.7]	[6.6]	[14.1]	
SMB	0.766	1.111	1.004	
	[4.4]	[4.6]	[11.3]	
HML	-0.0847	-0.0508	-0.0493	
	[-0.229]	[-0.097]	[-0.232]	
R^2	58%	41%	77%	

Panel 5. Differences in mean one-year Calendar Time Abnormal Returns	
High-Valuation minus Low Valuation	4.28%[a]
	(2.49)
Cash Acquisitions minus Stock Acquisitions	0.91%[b]
	(1.82)
High-Valuation Cash minus Low-Valuation Cash	2.74%
	(1.04)
High-Valuation Stock minus Low-Valuation Stock	0.15%
	(0.01)
Public Targets minus Private Targets	-0.55%[b]
	(-1.68)
Public Targets minus Subsidiary Targets	-0.79%[a]
	(-2.98)
High-Valuation Public minus Low-Valuation Public	-
	-
High-Valuation Private minus Low-Valuation Private	3.39%[b]
	(2.02)
High-Valuation Subsidiary minus Low-Valuation Subsidiary	8.80%[a]
	(2.54)

Table 3.10. 2-Year Calendar-Time Analysis of Long-Run Excess Returns using Fama-French (1993) 3-Factor Model (P/E Classification)

This table presents the OLS estimates of abnormal returns to merger portfolios according to the Fama and French 3-factor model. Panel 1 represents the overall portfolio consisting of 2615 successful domestic takeover bids that took place over the period 1984-1999 as identified from the *Securities Data Corporation's* (SDC) *Global Financing* database. Panels 2-4 are comprised of the results we obtain during high-, neutral- and low-valuation market respectively. Using monthly data from 1984 till May 2004, each month through this period is classified as a high- (low-) valuation month if the detrended market P/E of that month belongs to the top (bottom) half of all detrended P/Es above (below) the past five-year average. All other months are classified as neutral-valuation acquisitions. In Panel A, calendar time regressions are performed on the basis of target public status (Public, Private, Subsidiary). In Panel B calendar time abnormal returns are formed according to the method of payment (Cash, Stock, Combination of Cash and Stock). Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. Acquirers enter the portfolio on the effective day of the successful takeover and remain for 24 months. Portfolios are rebalanced each month to include firms that have just completed a takeover. The t-statistics are in (brackets) and calculated on the basis of Andrews' (1991) heteroscedasticity and autocorrelation consistent standard errors. The numbers in percentage represent the reported FF α, which is the average of the individual, firm-specific intercepts. Panel 5 contains the differences in mean two-year calendar time abnormal returns. [a] Denotes significance at the 1% level; [b] Denotes significance at the 5% level; [c] Denotes significance at the 10% level.

Panel 1. All Acquisitions	**Panel A: All-Target Public Status**			
	All	**Public**	**Private**	**Subsidiary**
Intercept	-1.16%[a]	-1.62%[a]	-1.26%[a]	-1.16%[a]
Rm-Rf	1.172	1.216	1.206	1.141
	[42.1]	[29.1]	[35.9]	[31.6]
SMB	0.749	0.632	0.863	0.637
	[19.8]	[11.4]	[19.01]	[13.4]
HML	0.382	0.673	0.271	0.518
	[7.5]	[9.03]	[4.4]	[8.06]
R^2	90%	82%	87%	85%
	Panel B: Method of Payment			
	Cash	**Stock**	**Combo**	
Intercept	-1.14%[a]	-1.33%[b]	-1.30%[a]	
Rm-Rf	1.200	1.428	1.191	
	[30.4]	[9.5]	[25.6]	
SMB	0.630	1.264	0.828	
	[12.0]	[6.2]	[13.4]	
HML	0.497	0.156	0.301	
	[7.02]	[0.5]	[3.6]	
R^2	82%	36%	79%	

Table 3.10 –*Continued*

Table 3.10 –*Continued*

Panel 2. High-Valuation Acquisitions	**Panel A: All-Target Public Status**			
	All	**Public**	**Private**	**Subsidiary**
Intercept	-1.18%[a]	-1.47%[a]	-1.16%[a]	-0.99%[a]
Rm-Rf	1.172	1.248	1.217	1.127
	[29.8]	[19.6]	[26.01]	[22.1]
SMB	0.662	0.487	0.727	0.607
	[12.5]	[5.7]	[11.5]	[8.8]
HML	0.330	0.620	0.201	0.513
	[5.08]	[6.02]	[2.5]	[6.09]
R^2	88%	77%	85%	80%
	Panel B: Method of Payment			
	Cash	**Stock**	**Combo**	
Intercept	-1.18%[a]	-1.46%[c]	-1.15%[a]	
Rm-Rf	1.112	1.645	1.210	
	[23.2]	[6.3]	[22.1]	
SMB	0.609	1.235	0.632	
	[9.4]	[3.5]	[8.6]	
HML	0.474	0.152	0.126	
	[6.00]	[0.3]	[1.4]	
R^2	81%	30%	81%	

Panel 3. Neutral-Valuation Acquisitions	**Panel A: All-Target Public Status**			
	All	**Public**	**Private**	**Subsidiary**
Intercept	-1.14%[a]	-1.82%[a]	-1.22%[a]	-1.25%[a]
Rm-Rf	1.145	1.293	1.172	1.132
	[36.6]	[20.1]	[32.3]	[26.3]
SMB	0.791	0.658	0.930	0.647
	[18.5]	[7.6]	[18.8]	[11.2]
HML	0.342	0.716	0.201	0.444
	[5.8]	[6.1]	[2.9]	[5.6]
R^2	88%	69%	86%	80%
	Panel B: Method of Payment			
	Cash	**Stock**	**Combo**	
Intercept	-1.22%[a]	-1.26%[a]	-1.09%[a]	
Rm-Rf	1.169	1.148	1.148	
	[33.7]	[17.7]	[21.1]	
SMB	0.696	0.851	0.929	
	[15.05]	[9.6]	[12.7]	
HML	0.495	0.647	0.281	
	[7.8]	[5.3]	[2.8]	
R^2	86%	64%	73%	

Table 3.10 –*Continued*

Table 3.10 –*Continued*

Panel 4. Low-Valuation Acquisitions	**Panel A: All-Target Public Status**			
	All	**Public**	**Private**	**Subsidiary**
Intercept	-1.67%[a]	-1.12%[b]	-1.63%[a]	-1.55%[a]
Rm-Rf	1.262	1.379	1.231	1.235
	[16.02]	[11.9]	[13.4]	[12.4]
SMB	0.755	0.752	0.844	0.715
	[7.3]	[4.9]	[6.9]	[5.5]
HML	-0.207	0.485	-0.0919	-0.0842
	[-1.008]	[1.4]	[-0.39]	[-0.32]
R^2	66%	68%	59%	57%
	Panel B: Method of Payment			
	Cash	**Stock**	**Combo**	
Intercept	-1.51%[a]	-2.27%[a]	-1.28%[a]	
Rm-Rf	1.310	1.140	1.089	
	[14.8]	[7.02]	[14.3]	
SMB	0.627	0.765	1.077	
	[5.4]	[3.5]	[11.1]	
HML	-0.517	0.396	0.536	
	[-2.2]	[0.9]	[2.5]	
R^2	63%	33%	73%	

Panel 5. Differences in mean two-year Calendar Time Abnormal Returns	
High-Valuation minus Low Valuation	0.85%[b]
	(1.66)
Cash Acquisitions minus Stock Acquisitions	0.30%
	(0.50)
High-Valuation Cash minus Low-Valuation Cash	0.62%
	(0.93)
High-Valuation Stock minus Low-Valuation Stock	0.21%
	(0.14)
Public Targets minus Private Targets	-0.22%[c]
	(-1.36)
Public Targets minus Subsidiary Targets	-0.52%[a]
	(-2.71)
High-Valuation Public minus Low-Valuation Public	-0.82%
	(-0.96)
High-Valuation Private minus Low-Valuation Private	1.09%[c]
	(1.44)
High-Valuation Subsidiary minus Low-Valuation Subsidiary	1.83%[a]
	(2.90)

Table 3.11. 3-Year Calendar-Time Analysis of Long-Run Excess Returns using Fama-French (1993) 3-Factor Model (P/E Classification)

This table presents the OLS estimates of abnormal returns to merger portfolios according to the Fama and French 3-factor model. Panel 1 represents the overall portfolio consisting of 2332 successful domestic takeover bids that took place over the period 1984-1998 as identified from the *Securities Data Corporation's* (SDC) *Global Financing* database. Panels 2-4 are comprised of the results we obtain during high-, neutral- and low-valuation market respectively. Using monthly data from 1984 till May 2004, each month through this period is classified as a high- (low-) valuation month if the detrended market P/E of that month belongs to the top (bottom) half of all detrended P/Es above (below) the past five-year average. All other months are classified as neutral-valuation acquisitions. In Panel A, calendar time regressions are performed on the basis of target public status (Public, Private, Subsidiary). In Panel B calendar time abnormal returns are formed according to the method of payment (Cash, Stock, Combination of Cash and Stock). Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. Acquirers enter the portfolio on the effective day of the successful takeover and remain for 36 months. Portfolios are rebalanced each month to include firms that have just completed a takeover. The t-statistics are in (brackets) and calculated on the basis of Andrews' (1991) heteroscedasticity and autocorrelation consistent standard errors. The numbers in percentage represent the reported FF α, which is the average of the individual, firm-specific intercepts. Panel 5 contains the differences in mean three-year calendar time abnormal returns. [a] Denotes significance at the 1% level; [b] Denotes significance at the 5% level; [c] Denotes significance at the 10% level.

Panel 1. All Acquisitions	**Panel A: All-Target Public Status**			
	All	**Public**	**Private**	**Subsidiary**
Intercept	-1.29%[a]	-1.62%[a]	-1.33%[a]	-1.33%[a]
Rm-Rf	1.196	1.204	1.227	1.180
	[42.1]	[28.9]	[36.5]	[31.4]
SMB	0.777	0.705	0.885	0.674
	[20.1]	[12.7]	[19.5]	[13.5]
HML	0.421	0.743	0.349	0.512
	[8.1]	[9.99]	[5.6]	[7.6]
R^2	90%	82%	88%	84%
	Panel B: Method of Payment			
	Cash	**Stock**	**Combo**	
Intercept	-1.30%[a]	-1.32%[b]	-1.43%[a]	
Rm-Rf	1.244	1.164	1.227	
	[31.2]	[24.9]	[26.8]	
SMB	0.693	0.822	0.877	
	[13.04]	[13.02]	[14.4]	
HML	0.494	0.433	0.355	
	[6.8]	[5.08]	[4.3]	
R^2	83%	77%	80%	

Table 3.11 –*Continued*

Table 3.11 –*Continued*

Panel 2. High-Valuation Acquisitions	**Panel A: All-Target Public Status**			
	All	**Public**	**Private**	**Subsidiary**
Intercept	-1.35%[a]	-0.952%[a]	-1.39%[a]	-1.08%[a]
Rm-Rf	1.199	1.242	1.235	1.146
	[29.6]	[18.0]	[25.9]	[24.2]
SMB	0.669	0.546	0.695	0.666
	[12.06]	[5.9]	[10.6]	[10.3]
HML	0.431	0.750	0.381	0.523
	[6.1]	[6.5]	[4.6]	[6.5]
R^2	86%	71%	82%	81%
	Panel B: Method of Payment			
	Cash	**Stock**	**Combo**	
Intercept	-1.20%[a]	-1.61%[a]	-1.36%[a]	
Rm-Rf	1.180	1.267	1.216	
	[26.3]	[14.2]	[22.06]	
SMB	0.667	0.618	0.647	
	[10.8]	[5.2]	[8.5]	
HML	0.505	0.423	0.248	
	[6.5]	[2.8]	[2.6]	
R^2	83%	60%	78%	

Panel 3. Neutral-Valuation Acquisitions	**Panel A: All-Target Public Status**			
	All	**Public**	**Private**	**Subsidiary**
Intercept	-1.26%[a]	-1.87%[a]	-1.24%[a]	-1.41%[a]
Rm-Rf	1.160	1.188	1.192	1.149
	[40.2]	[23.1]	[35.2]	[28.3]
SMB	0.790	0.666	0.933	0.631
	[20.2]	[9.7]	[20.3]	[11.7]
HML	0.383	0.598	0.308	0.468
	[7.2]	[6.5]	[4.9]	[6.4]
R^2	89%	74%	87%	82%
	Panel B: Method of Payment			
	Cash	**Stock**	**Combo**	
Intercept	-1.32%[a]	-0.931%[a]	-1.37%[a]	
Rm-Rf	1.178	1.064	1.193	
	[36.2]	[20.8]	[25.4]	
SMB	0.718	0.834	0.888	
	[16.6]	[12.06]	[14.3]	
HML	0.507	0.367	0.330	
	[8.7]	[3.9]	[3.9]	
R^2	87%	70%	79%	

Table 3.11 –*Continued*

Table 3.11 –*Continued*

Panel 4. Low-Valuation Acquisitions	**Panel A: All-Target Public Status**			
	All	**Public**	**Private**	**Subsidiary**
Intercept	-1.80%[a]	-1.15%[b]	-2.03%[a]	-1.31%[a]
Rm-Rf	1.240	1.411	1.262	1.182
	[18.4]	[13.8]	[15.3]	[15.4]
SMB	0.725	0.922	0.766	0.699
	[7.8]	[7.1]	[6.7]	[6.7]
HML	0.311	0.654	0.312	0.331
	[2.3]	[2.5]	[1.9]	[2.1]
R²	67%	69%	59%	61%
	Panel B: Method of Payment			
	Cash	**Stock**	**Combo**	
Intercept	-1.51%[a]	-2.20%[a]	-1.41%[a]	
Rm-Rf	1.227	1.302	1.016	
	[16.6]	[10.7]	[15.5]	
SMB	0.563	0.928	1.040	
	[5.5]	[5.04]	[13.7]	
HML	0.366	0.05149	0.734	
	[2.5]	[0.15]	[6.7]	
R²	62%	45%	74%	

Panel 5. Differences in mean three-year Calendar Time Abnormal Returns	
High-Valuation minus Low Valuation	0.39%
	(1.18)
Cash Acquisitions minus Stock Acquisitions	0.12%
	(0.40)
High-Valuation Cash minus Low-Valuation Cash	0.17%
	(0.44)
High-Valuation Stock minus Low-Valuation Stock	-0.45%
	(-0.66)
Public Targets minus Private Targets	-0.15%
	(-0.80)
Public Targets minus Subsidiary Targets	-0.35%[b]
	(-1.78)
High-Valuation Public minus Low-Valuation Public	-0.14%
	(-0.20)
High-Valuation Private minus Low-Valuation Private	0.38%
	(0.59)
High-Valuation Subsidiary minus Low-Valuation Subsidiary	0.50%
	(1.12)

Table 3.12. 1-Year Calendar-Time Analysis of Long-Run Excess Returns using Fama-French (1993) 3-Factor Model (TOTMKUK Classification)

This table presents the OLS estimates of abnormal returns to merger portfolios according to the Fama and French 3-factor model. Panel 1 represents the overall portfolio consisting of 2918 successful domestic takeover bids that took place over the period 1984-2000 as identified from the *Securities Data Corporation's* (SDC) *Global Financing* database. Panels 2-4 are comprised of the results we obtain during high-, neutral- and low-valuation market respectively. Using monthly data from 1984 till May 2004, each month through this period is classified as a high- (low-) valuation month if the detrended TOTMKUK index level of that month belongs to the top (bottom) half of all detrended TOTMKUK levels above (below) the past five-year average. All other months are classified as neutral-valuation acquisitions. In Panel A, calendar time regressions are performed on the basis of target public status (Public, Private, Subsidiary). In Panel B calendar time abnormal returns are formed according to the method of payment (Cash, Stock, Combination of Cash and Stock). Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. Acquirers enter the portfolio on the effective day of the successful takeover and remain for 12 months. Portfolios are rebalanced each month to include firms that have just completed a takeover. The t-statistics are in (brackets) and calculated on the basis of Andrews' (1991) heteroscedasticity and autocorrelation consistent standard errors. The numbers in percentage represent the reported FF α, which is the average of the individual, firm-specific intercepts. Panel 5 contains the differences in mean one-year calendar time abnormal returns. [a] Denotes significance at the 1% level; [b] Denotes significance at the 5% level; [c] Denotes significance at the 10% level.

Panel 1. All Acquisitions	**Panel A: All-Target Public Status**			
	All	**Public**	**Private**	**Subsidiary**
Intercept	-1.00%[a]	-1.75%[a]	-1.06%[a]	-1.05%[a]
Rm-Rf	1.185	1.212	1.210	1.192
	[38.9]	[16.2]	[33.7]	[28.4]
SMB	0.788	0.650	0.882	0.723
	[19.1]	[6.5]	[18.1]	[13.1]
HML	0.181	0.560	0.04758	0.344
	[3.2]	[4.2]	[0.7]	[4.6]
R^2	89%	58%	87%	82%
	Panel B: Method of Payment			
	Cash	**Stock**	**Combo**	
Intercept	-0.976%[a]	-1.79%[a]	-0.906%[a]	
Rm-Rf	1.210	1.257	1.209	
	[30.1]	[15.3]	[24.1]	
SMB	0.685	0.944	0.847	
	[12.7]	[8.4]	[12.8]	
HML	0.373	-0.404	0.0934	
	[5.2]	[2.7]	[1.04]	
R^2	82%	60%	78%	

Table 3.12 –*Continued*

Table 3.12 –*Continued*

Panel 2. High-Valuation Acquisitions	**Panel A: All-Target Public Status**			
	All	**Public**	**Private**	**Subsidiary**
Intercept	-1.87%[a]	-2.79%[a]	-1.65%[a]	-1.80%[a]
Rm-Rf	1.435	1.223	1.497	1.360
	[27.8]	[7.9]	[24.2]	[16.7]
SMB	0.919	0.614	1.027	0.858
	[13.8]	[3.09]	[12.9]	[8.1]
HML	0.418	0.627	0.287	0.607
	[5.2]	[2.6]	[3.001]	[4.8]
R^2	93%	49%	92%	82%
	Panel B: Method of Payment			
	Cash	**Stock**	**Combo**	
Intercept	-1.57%[a]	-3.04%[a]	-1.70%[a]	
Rm-Rf	1.412	1.546	1.346	
	[23.6]	[8.1]	[18.8]	
SMB	0.810	0.856	0.970	
	[10.5]	[3.5]	[10.5]	
HML	0.646	-0.402	0.209	
	[6.9]	[-1.4]	[1.8]	
R^2	90%	60%	87%	

Panel 3. Neutral-Valuation Acquisitions	**Panel A: All-Target Public Status**			
	All	**Public**	**Private**	**Subsidiary**
Intercept	-0.708%[a]	-0.838%[a]	-0.856%[a]	-0.739%[a]
Rm-Rf	1.164	1.218	1.203	1.185
	[35.3]	[19.1]	[26.6]	[27.7
SMB	0.842	0.654	0.955	0.755
	[16.2]	[6.5]	[13.4]	[11.6]
HML	-0.0509	0.107	-0.0335	0.01131
	[-0.53]	[0.59]	[-0.25]	[0.09]
R^2	89%	73%	83%	85%
	Panel B: Method of Payment			
	Cash	**Stock**	**Combo**	
Intercept	-0.741%[a]	-1.18%[b]	-0.619%[a]	
Rm-Rf	1.215	1.129	1.193	
	[25.29]	[11.35]	[18.8]	
SMB	0.809	1.231	0.778	
	[10.93]	[7.58]	[8.07]	
HML	-0.0555	-0.267	0.128	
	[-0.40]	[-0.91]	[0.71]	
R^2	81%	51%	72%	

Table 3.12 –*Continued*

Table 3.12 –*Continued*

Panel 4. Low-Valuation Acquisitions	**Panel A: All-Target Public Status**			
	All	**Public**	**Private**	**Subsidiary**
Intercept	-0.732%[a]	-2.02%[a]	-0.805%[a]	-0.528%[b]
Rm-Rf	1.060	1.211	1.065	1.016
	[26.7]	[6.6]	[20.3]	[21.1]
SMB	0.877	1.113	0.919	0.737
	[15.4]	[4.2]	[12.2]	[10.7]
HML	-0.0402	-0.179	0.04952	-0.118
	[-0.40]	[-0.39]	[0.38]	[-0.99]
R^2	90%	38%	85%	85%
	Panel B: Method of Payment			
	Cash	**Stock**	**Combo**	
Intercept	-0.855%[a]	-1.80%[c]	-0.472%[b]	
Rm-Rf	1.050	1.251	1.051	
	[24.2]	[5.7]	[18.9]	
SMB	0.833	1.197	0.921	
	[13.4]	[4.05]	[11.6]	
HML	-0.0993	-0.311	0.02795	
	[-0.92]	[-0.57]	[0.20]	
R^2	88%	36%	83%	

Panel 5. Differences in mean one-year Calendar Time Abnormal Returns	
High-Valuation minus Low Valuation	0.75%
	(0.97)
Cash Acquisitions minus Stock Acquisitions	0.91%[b]
	(1.82)
High-Valuation Cash minus Low-Valuation Cash	0.28%
	(0.25)
High-Valuation Stock minus Low-Valuation Stock	-
	-
Public Targets minus Private Targets	-0.55%[b]
	(-1.68)
Public Targets minus Subsidiary Targets	-0.79%[a]
	(-2.98)
High-Valuation Public minus Low-Valuation Public	-1.63%
	(-0.43)
High-Valuation Private minus Low-Valuation Private	0.61%
	(0.30)
High-Valuation Subsidiary minus Low-Valuation Subsidiary	5.27%
	(1.09)

Table 3.13. 2-Year Calendar-Time Analysis of Long-Run Excess Returns using Fama-French (1993) 3-Factor Model (TOTMKUK Classification)

This table presents the OLS estimates of abnormal returns to merger portfolios according to the Fama and French 3-factor model. Panel 1 represents the overall portfolio consisting of 2615 successful domestic takeover bids that took place over the period 1984-1999 as identified from the *Securities Data Corporation's* (SDC) *Global Financing* database. Panels 2-4 are comprised of the results we obtain during high-, neutral- and low-valuation market respectively. Using monthly data from 1984 till May 2004, each month through this period is classified as a high- (low-) valuation month if the detrended TOTMKUK index level of that month belongs to the top (bottom) half of all detrended TOTMKUK levels above (below) the past five-year average. All other months are classified as neutral-valuation acquisitions. In Panel A, calendar time regressions are performed on the basis of target public status (Public, Private, Subsidiary). In Panel B calendar time abnormal returns are formed according to the method of payment (Cash, Stock, Combination of Cash and Stock). Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. Acquirers enter the portfolio on the effective day of the successful takeover and remain for 24 months. Portfolios are rebalanced each month to include firms that have just completed a takeover. The t-statistics are in (brackets) and calculated on the basis of Andrews' (1991) heteroscedasticity and autocorrelation consistent standard errors. The numbers in percentage represent the reported FF α, which is the average of the individual, firm-specific intercepts. Panel 5 contains the differences in mean two-year calendar time abnormal returns. [a] Denotes significance at the 1% level; [b] Denotes significance at the 5% level; [c] Denotes significance at the 10% level.

Panel 1. All Acquisitions	**Panel A: All-Target Public Status**			
	All	**Public**	**Private**	**Subsidiary**
Intercept	-1.16%[a]	-1.62%[a]	-1.26%[a]	-1.16%[a]
Rm-Rf	1.172	1.216	1.206	1.141
	[42.1]	[29.1]	[35.9]	[31.6]
SMB	0.749	0.632	0.863	0.637
	[19.8]	[11.4]	[19.01]	[13.4]
HML	0.382	0.673	0.271	0.518
	[7.5]	[9.03]	[4.4]	[8.06]
R^2	90%	82%	87%	85%
	Panel B: Method of Payment			
	Cash	**Stock**	**Combo**	
Intercept	-1.14%[a]	-1.33%[b]	-1.30%[a]	
Rm-Rf	1.200	1.428	1.191	
	[30.4]	[9.5]	[25.6]	
SMB	0.630	1.264	0.828	
	[12.0]	[6.2]	[13.4]	
HML	0.497	0.156	0.301	
	[7.02]	[0.5]	[3.6]	
R^2	82%	36%	79%	

Table 3.13 –*Continued*

Table 3.13 –*Continued*

Panel 2. High-Valuation Acquisitions	**Panel A: All-Target Public Status**			
	All	**Public**	**Private**	**Subsidiary**
Intercept	-1.55%[a]	-1.80%[a]	-1.58%[a]	-1.31%[a]
Rm-Rf	1.400	1.287	1.488	1.271
	[29.09]	[15.9]	[25.3]	[23.6]
SMB	0.814	0.564	0.948	0.680
	[13.1]	[5.3]	[12.5]	[9.7]
HML	0.576	0.694	0.476	0.720
	[7.5]	[5.3]	[5.08]	[8.3]
R^2	92%	76%	90%	88%
	Panel B: Method of Payment			
	Cash	**Stock**	**Combo**	
Intercept	-1.44%[a]	-0.699%	-1.53%[a]	
Rm-Rf	1.365	1.991	1.278	
	[24.6]	[5.6]	[19.9]	
SMB	0.692	1.558	0.866	
	[9.7]	[3.4]	[10.5]	
HML	0.725	0.552	0.331	
	[8.2]	[0.9]	[3.2]	
R^2	88%	33%	85%	

Panel 3. Neutral-Valuation Acquisitions	**Panel A: All-Target Public Status**			
	All	**Public**	**Private**	**Subsidiary**
Intercept	-1.16%[a]	-0.865%[a]	-1.48%[a]	-1.07%[a]
Rm-Rf	1.207	1.163	1.238	1.253
	[37.1]	[22.004]	[25.9]	[29.13]
SMB	0.860	0.559	1.013	0.792
	[17.1]	[6.9]	[13.7]	[12.2]
HML	0.145	0.223	0.329	0.002776
	[1.57]	[1.47]	[2.42]	[0.023]
R^2	89%	76%	81%	85%
	Panel B: Method of Payment			
	Cash	**Stock**	**Combo**	
Intercept	-1.08%[a]	-1.47%[a]	-1.45%[a]	
Rm-Rf	1.267	1.129	1.242	
	[28.4]	[18.3]	[21.15]	
SMB	0.783	0.913	0.873	
	[11.5]	[9.5]	[9.8]	
HML	0.03183	0.04346	0.474	
	[0.255]	[0.242]	[2.89]	
R^2	83%	68%	75%	

Table 3.13 –*Continued*

Table 3.13 –*Continued*

Panel 4. Low-Valuation Acquisitions	**Panel A: All-Target Public Status**			
	All	**Public**	**Private**	**Subsidiary**
Intercept	-1.03%[a]	-1.72%[a]	-1.09%[a]	-0.919%[a]
Rm-Rf	1.098	1.290	1.088	1.058
	[33.9]	[12.5]	[27.9]	[24.3]
SMB	0.830	0.912	0.862	0.740
	[18.4]	[6.3]	[15.9]	[12.2]
HML	0.0771	0.379	0.138	0.002794
	[0.943]	[1.458]	[1.407]	[0.025]
R^2	92%	63%	89%	86%
	Panel B: Method of Payment			
	Cash	**Stock**	**Combo**	
Intercept	-1.07%[a]	-2.13%[a]	-0.873%[a]	
Rm-Rf	1.086	1.205	1.102	
	[30.3]	[7.4]	[24.1]	
SMB	0.776	0.808	0.939	
	[15.6]	[3.7]	[14.7]	
HML	0.04205	0.416	0.112	
	[0.465]	[0.988]	[0.973]	
R^2	90%	40%	86%	

Panel 5. Differences in mean two-year Calendar Time Abnormal Returns	
High-Valuation minus Low Valuation	0.47%
	(0.95)
Cash Acquisitions minus Stock Acquisitions	0.30%
	(0.50)
High-Valuation Cash minus Low-Valuation Cash	0.48%
	(1.26)
High-Valuation Stock minus Low-Valuation Stock	-0.64%
	(-0.41)
Public Targets minus Private Targets	-0.22%[c]
	(-1.36)
Public Targets minus Subsidiary Targets	-0.52%[a]
	(-2.71)
High-Valuation Public minus Low-Valuation Public	-0.37%
	(-0.38)
High-Valuation Private minus Low Valuation Private	0.40%
	(0.54)
High-Valuation Subsidiary minus Low-Valuation Subsidiary	1.65%[b]
	(2.10)

Table 3.14. 3-Year Calendar-Time Analysis of Long-Run Excess Returns using Fama-French (1993) 3-Factor Model (TOTMKUK Classification)

This table presents the OLS estimates of abnormal returns to merger portfolios according to the Fama and French 3-factor model. Panel 1 represents the overall portfolio consisting of 2332 successful domestic takeover bids that took place over the period 1984-1998 as identified from the *Securities Data Corporation's* (SDC) *Global Financing* database. Panels 2-4 are comprised of the results we obtain during high-, neutral- and low-valuation market respectively. Using monthly data from 1984 till May 2004, each month through this period is classified as a high- (low-) valuation month if the detrended TOTMKUK index level of that month belongs to the top (bottom) half of all detrended TOTMKUK levels above (below) the past five-year average. All other months are classified as neutral-valuation acquisitions. In Panel A, calendar time regressions are performed on the basis of target public status (Public, Private, Subsidiary). In Panel B calendar time abnormal returns are formed according to the method of payment (Cash, Stock, Combination of Cash and Stock). Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. Acquirers enter the portfolio on the effective day of the successful takeover and remain for 36 months. Portfolios are rebalanced each month to include firms that have just completed a takeover. The t-statistics are in (brackets) and calculated on the basis of Andrews' (1991) heteroscedasticity and autocorrelation consistent standard errors. The numbers in percentage represent the reported FF α, which is the average of the individual, firm-specific intercepts. Panel 5 contains the differences in mean three-year calendar time abnormal returns. [a] Denotes significance at the 1% level; [b] Denotes significance at the 5% level; [c] Denotes significance at the 10% level.

Panel 1. All Acquisitions	**Panel A: All-Target Public Status**			
	All	**Public**	**Private**	**Subsidiary**
Intercept	-1.29%[a]	-1.62%[a]	-1.33%[a]	-1.33%[a]
Rm-Rf	1.196	1.204	1.227	1.180
	[42.1]	[28.9]	[36.5]	[31.4]
SMB	0.777	0.705	0.885	0.674
	[20.1]	[12.7]	[19.5]	[13.5]
HML	0.421	0.743	0.349	0.512
	[8.1]	[9.99]	[5.6]	[7.6]
R^2	90%	82%	88%	84%
	Panel B: Method of Payment			
	Cash	**Stock**	**Combo**	
Intercept	-1.30%[a]	-1.32%[b]	-1.43%[a]	
Rm-Rf	1.244	1.164	1.227	
	[31.2]	[24.9]	[26.8]	
SMB	0.693	0.822	0.877	
	[13.04]	[13.02]	[14.4]	
HML	0.494	0.433	0.355	
	[6.8]	[5.08]	[4.3]	
R^2	83%	77%	80%	

Table 3.14 –*Continued*

Table 3.14 –*Continued*

Panel 2. High-Valuation Acquisitions	**Panel A: All-Target Public Status**			
	All	**Public**	**Private**	**Subsidiary**
Intercept	-1.73%[a]	-1.33%[a]	-1.80%[a]	-1.36%[a]
Rm-Rf	1.439	1.283	1.540	1.297
	[30.6]	[16.3]	[26.07]	[22.06]
SMB	0.878	0.598	1.032	0.733
	[14.1]	[5.8]	[13.1]	[9.4]
HML	0.632	0.694	0.611	0.708
	[7.9]	[5.2]	[6.07]	[7.2]
R^2	92%	75%	89%	84%
	Panel B: Method of Payment			
	Cash	**Stock**	**Combo**	
Intercept	-1.72%[a]	-1.16%[b]	-1.37%[a]	
Rm-Rf	1.444	1.432	1.322	
	[26.1]	[14.8]	[23.3]	
SMB	0.827	0.821	0.927	
	[11.3]	[6.4]	[12.3]	
HML	0.754	0.558	0.398	
	[8.04]	[3.4]	[4.1]	
R^2	88%	72%	87%	

Panel 3. Neutral-Valuation Acquisitions	**Panel A: All-Target Public Status**			
	All	**Public**	**Private**	**Subsidiary**
Intercept	-1.26%[a]	-1.35%[a]	-1.23%[a]	-1.39%[a]
Rm-Rf	1.202	1.191	1.210	1.241
	[40.8]	[21.7]	[32.3]	[31.6]
SMB	0.840	0.791	0.983	0.721
	[18.8]	[9.7]	[17.3]	[12.4]
HML	0.251	0.435	0.006307	0.420
	[3.42]	[2.91]	[0.068]	[4.37]
R^2	91%	75%	86%	86%
	Panel B: Method of Payment			
	Cash	**Stock**	**Combo**	
Intercept	-1.33%[a]	-1.39%[a]	-1.41%[a]	
Rm-Rf	1.249	1.152	1.238	
	[28.9]	[19.3]	[23.07]	
SMB	0.720	0.945	0.904	
	[11.2]	[10.4]	[11.3]	
HML	0.405	0.135	0.291	
	[3.84]	[0.81]	[2.22]	
R^2	83%	69%	77%	

Table 3.14 –*Continued*

Table 3.14 –*Continued*

Panel 4. Low-Valuation Acquisitions	**Panel A: All-Target Public Status**			
	All	**Public**	**Private**	**Subsidiary**
Intercept	-1.12%[a]	-1.87%[a]	-1.22%[a]	-0.952%[a]
Rm-Rf	1.123	1.324	1.133	1.042
	[36.5]	[13.8]	[28.9]	[26.8]
SMB	0.863	0.997	0.897	0.767
	[20.8]	[7.7]	[16.9]	[14.6]
HML	0.103	0.573	0.182	-0.0194
	[1.3]	[2.3]	[1.8]	[-0.19]
R^2	92%	65%	89%	86%
	Panel B: Method of Payment			
	Cash	**Stock**	**Combo**	
Intercept	-1.15%[a]	-1.35%[b]	-1.03%[a]	
Rm-Rf	1.108	1.336	1.127	
	[34.5]	[11.1]	[24.4]	
SMB	0.822	0.972	0.934	
	[19.02]	[6.2]	[15.02]	
HML	0.07376	0.156	0.122	
	[0.90]	[0.49]	[1.04]	
R^2	91%	56%	85%	

Panel 5. Differences in mean three-year Calendar Time Abnormal Returns	
High-Valuation minus Low Valuation	0.18%
	(0.51)
Cash Acquisitions minus Stock Acquisitions	0.12%
	(0.40)
High-Valuation Cash minus Low-Valuation Cash	0.46%[b]
	(1.91)
High-Valuation Stock minus Low-Valuation Stock	-1.30%[b]
	(-1.81)
Public Targets minus Private Targets	-0.15%
	(-0.80)
Public Targets minus Subsidiary Targets	-0.35%[b]
	(-1.78)
High-Valuation Public minus Low-Valuation Public	1.40%[c]
	(1.32)
High-Valuation Private minus Low-Valuation Private	-0.04%
	(-0.08)
High-Valuation Subsidiary minus Low-Valuation Subsidiary	1.12%[b]
	(2.26)

Table 3.15. Effect of Market-Wide Valuations: Controlling for Acquirer Book-to-Market

In this table the impact of the market state is examined by controlling for acquirer book-to-market ratio. We divide the sample into high, medium and low book-to-market acquirers, and examine the 1, 2 and 3-year performance of acquirers making acquisitions during high- and low-valuation periods for each book-to-market category. Using monthly data from 1984 till May 2004, each month through this period is classified as a high-(low-) valuation month if the detrended TOTMKUK index level of that month belongs to the top (bottom) half of all detrended TOTMKUK levels above (below) the past five-year average. All other months are classified as neutral-valuation acquisitions. Acquirers are divided into equal subsamples of high, medium and low book-to-market firms based on their book-to-market ratio one month prior to the acquisition announcement. [a] Denotes significance at the 1% level; [b] Denotes significance at the 5% level; [c] Denotes significance at the 10% level. T-stats are provided in parentheses.

Panel A: 1 year	**High-Valuation Acquisitions**		**Low-Valuation Acquisitions**	
	Number	**Intercept**	**Number**	**Intercept**
High B/M ***(Value Acquirers)***	399	-1.00%[a] (-3.02)	172	-1.04%[a] (-3.07)
Medium B/M	405	-2.23%[a] (-4.73)	191	-0.65%[c] (-1.86)
Low B/M ***(Glamour Acquirers)***	400	-1.42%[a] (-2.33)	142	-0.66%[b] (-2.10)
Panel B: 2 years	**High-Valuation Acquisitions**		**Low-Valuation Acquisitions**	
	Number	**Intercept**	**Number**	**Intercept**
High B/M ***(Value Acquirers)***	296	-1.34%[a] (-4.84)	172	-0.99%[a] (-3.07)
Medium B/M	315	-1.54%[a] (-5.70)	191	-1.01[a] (-3.85)
Low B/M ***(Glamour Acquirers)***	290	-1.90%[a] (-4.37)	142	-1.02%[a] (-3.60)
Panel C: 3 years	**High-Valuation Acquisitions**		**Low-Valuation Acquisitions**	
	Number	**Intercept**	**Number**	**Intercept**
High B/M ***(Value Acquirers)***	201	-1.27%[a] (-5.21)	172	-1.13%[a] (-5.23)
Medium B/M	232	-1.21%[a] (-3.79)	191	-1.20%[a] (-4.80)
Low B/M ***(Glamour Acquirers)***	200	-1.33%[a] (-4.37)	142	-0.96%[b] (-3.85)

Table 3.16. 1, 2 and 3-Year Calendar-Time Analysis of Long-Run Excess Returns of Acquirers with the Best and Worst Pre-event Performance using Fama-French (1993) 3-Factor Model

This table presents pre-announcement monthly average returns as well as 1, 2 and 3-year monthly average calendar time abnormal returns of four categories of acquirers. Firstly, acquirers are divided into two groups, high and low-valuation acquirers respectively. High- (low)-valuation acquirers are the one who purchased firms during periods of high- (low-) stock market valuations. Using monthly data from 1984 till May 2004, each month through this period is classified as a high- (low-) valuation month if the detrended TOTMKUK index level of that month belongs to the top (bottom) half of all detrended TOTMKUK levels above (below) the past five-year average. The two groups created above are further subdivided into four categories: i) High-valuation acquirers who had the highest six-month pre-announcement monthly average returns, ii) High-valuation acquirers who had the lowest six-month pre-announcement monthly average returns, iii) Low-valuation acquirers who had the highest six-month monthly average returns, iv) Low-valuation acquirers who had the lowest six-month pre-announcement monthly average returns. [a] Denotes significance at the 1% level; [b] Denotes significance at the 5% level; [c] Denotes significance at the 10% level. T-stats are provided in parentheses.

	High-Valuation Acquirers		Low-Valuation Acquirers	
	Top quintile in terms of pre-event returns	Bottom quintile in terms of pre-event returns	Top quintile in terms of pre-event returns	Bottom quintile in terms of pre-event returns
Average 6-month pre-event CTA Returns	5.58%	-2.22%	3.01%	-2.07%
Average 1-year CTAR	-1.51%[a]	-2.58%[a]	0.66%[c]	-0.68%
	(-5.36)	(-4.53)	(1.78)	(-1.54)
Average 6-month pre-event CTA Returns	5.16%	-1.89%	3.03%	-2.07%
Average 2-year CTAR	-1.47%[a]	-1.81%[a]	-0.008%	-0.89%[b]
	(-5.66)	(-3.08)	(-0.02)	(-2.20)
Average 6-month pre-event CTA Returns	5.03%	-2.06%	3.05%	-2.05%
Average 3-year CTAR	-1.64%[a]	-1.97%[a]	-0.13%	-0.81%[b]
	(-4.88)	(-3.92)	(-0.36)	(-2.19)

Table 3.17. 1, 2 and 3-Year Calendar-Time Analysis of Long-Run Excess Returns of Early and Late Acquirers during High Valuation Periods using Fama-French (1993) 3-Factor Model

This table (Panel A) presents 1, 2 and 3-year monthly average calendar time abnormal returns for all early and late acquisitions made during high-valuation periods. Using monthly data from 1984 till May 2004, each month through this period is classified as a high- (low-) valuation month if the detrended TOTMKUK index level of that month belongs to the top (bottom) half of all detrended TOTMKUK levels above (below) the past five-year average. All other months are classified as neutral-valuation acquisitions. Early movers are assumed to be the first 10% of acquirers in each high-valuation period. All remaining acquirers are classified as late movers. Panel B contains the differences in mean one, two and three-year calendar time abnormal returns [a] Denotes significance at the 1% level; [b] Denotes significance at the 5% level; [c] Denotes significance at the 10% level. T-stats are provided in parentheses.

	Panel A			
	Early Movers		Late Movers	
	Number	Intercept	Number	Intercept
1 year	124	-0.53%	1111	-1.94%[a]
		(-1.05)		(-7.62)
2 years	94	-0.78%[c]	841	-1.53%[a]
		(-1.80)		(-7.28)
3 years	66	-1.51%[a]	593	-1.75%[a]
		(-4.15)		(-9.30)

Panel B	
	Early Movers minus Late Movers
1 year	1.36%[a]
	(2.36)
2 years	0.74%[b]
	(1.81)
3 years	0.40%
	(0.93)

Chapter 4: Do Overconfident Acquirers Gain Less from Acquisitions?

4.1. Introduction

In chapter 2 we employed a sample of multiple acquirers to control for (much of) the information contained in a merger announcement. We found that private firms and subsidiaries experience significantly positive abnormal returns in the short-run while acquisitions of public targets lead to significant losses. However, when we examined bidders' performance in the long run we reported negative returns irrespective of the target ownership status. As we claimed, it is likely that the stock market overreacts around the acquisition announcement and its prices are gradually corrected in the long run. In Chapter 3 we tried to identify why bidders exhibit such performance. We used a sample of domestic UK acquisitions and implied that the stock market drives performance of bidding firms. In general, we found that bidders enjoy significantly larger profits when they acquire firms during upward markets rather than low-valuation periods; however, acquisitions undertaken during booming periods lead to a worse performance in the long-run. This result was robust when we controlled for method of payment and target ownership status. In addition, when we examined the interrelation between merger waves and stock market valuations, we concluded that overall stock prices are the most important factor for bidders' profits and losses. In other words, stock market valuations and not merger activity drive performance of bidding firms.

In this chapter, we argue that overconfidence traits appear as a deterministic factor of a manager's corporate decision to get involved in M&As. The main objective is to examine how overconfident/aggressive investment strategies (growth via M&As) are received by the market. In general, overconfident managers overestimate their abilities, precision of

their knowledge, and future prospects leading them to decisions that other managers, more rational, would never initiate. Consistent with Malmendier and Tate (2004) and in contrast to Shleifer and Vishny (2003), our overconfidence hypothesis suggests that merger decisions are made in a rational world by irrational decision-makers within the firm.

Most of the overconfidence models predict high trading volume in the stock market (asset pricing literature) in the presence of overconfident traders. Moreover, at the individual level, overconfident investors will trade more aggressively. Hence, first, the higher the degree of overconfidence of an investor, the higher the trading volume.[1] Second, periods with higher trading volumes (due to overconfidence) go in hand with lower profits (Barber and Odean (2001)). As a simple trader takes the decision to make an investment by purchasing shares (asset investment decision), by the same token a CEO is likely to take a corporate decision to accomplish a merger (corporate investment decision). The idea of overconfidence in corporate takeovers (corporate finance literature) stems from Roll (1986), with his well-known hubris hypothesis.[2] In a few words, Roll (1986) specifies that the motivation for many acquisitions followed by undesirable bidder returns is hubris resulting in overpayment for the target. Overconfident CEOs are likely to overrate the profits they can generate from an acquisition or the synergistic gains between their company and a potential target, overvaluing their contribution to their company and underestimating how disruptive a merger can be. As a result, overconfidence simply

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[1] Odean (1998) calls this finding "the most robust effect of overconfidence" suggesting that changes in trading volume is the primary testable implication of overconfidence theory. He also finds that overconfident traders exhibit lower expected utility than rational traders and hold underdiversified portfolios.

[2] Heaton (2002) postulates that irrationality is more pronounced in corporate finance than asset pricing literature. As he puts it: "The 'arbitrage' objection (rational agents will exploit irrational agents) is weaker because there are larger arbitrage bounds protecting managerial irrationality than protecting security market irrationality. The most obvious 'arbitrage' of managerial irrationality -the corporate takeover- incurs high transaction costs, and the specialized investors who pursue takeovers bear much idiosyncratic risk. Arbitrage strategies short of a corporate takeover are difficult to implement, because managerial decisions usually concern assets (including human assets) that trade in markets without short sale mechanisms or other derivative assets that make arbitrage possible" (Russell and Thaler (1985)).

implies that managers view their company as undervalued by outside investors who, in reality, are less optimistic about the prospects of the firm. Hence, three main propositions occur: i) the announcement effect is more likely to be lower for overconfident than for rational managers, bearing in mind that overconfidence is more likely to lead to value-destroying deals; ii) overconfident managers are more likely to conduct "bad" or "worse" mergers (i.e. mergers that destroy or have less wealth value for the acquiring firm's shareholders respectively) compared to rational mergers; and iii) managers are more likely to initiate mergers when they have access to sufficient sources of internal finance. In this case, they avoid the perceived loss in value from issuing undervalued equity to finance the merger.[3]

We therefore conduct, in this chapter, empirical tests of the above predictions. We argue that frequent acquirers[4] are overconfident and this prompts them to enter the merger market. Following Fuller, Netter and Stegemoller (2002), we define frequent acquirers as firms that successfully acquired five or more targets using alternative methods of payment during a very short period of time (three years) between 1980 and 2004 and examine their short-run stock returns. Thus, we classify managers as overconfident when they are frequent acquirers and explore their differences to casual managers in the observed merger activity.[5] As a result, two straight predictions are realized: i) the higher the degree of overconfidence, the larger the number of acquisitions conducted by the manager of a bidding firm and, ii) overconfidence, captured through multiple bidding, destroys shareholders' wealth value. Thus, overconfidence appears to be an explanation of merger

[3] For example, the market says a stock is worth $100 a share, but the CEO is sure it is worth at least $130. By this way of thinking issuing stock to do a deal means "giving away" $30 a share.
[4] Note that the terms bidder and acquirer are used interchangeably for the purpose of this study, because all the bids in our analysis lead to a completed acquisition.
[5] As Malmendier and Tate (2004) put it: 'Overall, the higher acquisitiveness of overconfident CEOs even "on average" suggests that overconfidence is an important determinant of merger activities'.

activity that generalizes across merger waves. In addition, destruction of value would also indicate that overconfident managers do not learn from their previous experience exploiting existing market positions and capabilities (Levinthal and March (1993)), which would correspondingly enhance their shareholders' wealth.

Using merger data from SDC and Datastream and employing standard event study methodology, we find that overconfident CEOs still perform worse in spite of controlling for several firm fixed effects (method of payment, target origin, core industry, M/B value, relative size). Our finding is also enhanced when we investigate the difference in returns within a multiple-acquirer sample and, more specifically, between the first and fifth-and-higher deals. Since the market reacts to first deals of multiple acquirers as it would do to casual acquisitions, our result shows that first-in-order deals behave like casuals and outperform significantly subsequent acquisition attempts providing a robust interpretation for the existence of overconfidence as reflected by our proxy (i.e. frequent acquisitions).

One important point to remember is that the direct link between overconfidence and high merger activity has never been shown or analyzed empirically. Our sample consists of 5334 UK M&As taking place over a 25-year period. Such a comprehensive (near exhaustive) sample has not been studied before for the UK and it provides an updated insight of the merger activity, which also covers the takeover booming wave of the 1990s. Finally, another aspect worth mentioning is that a significant proportion of UK firms appear to engage in multiple acquisitions over this period (around 30% of the entire population) while most importantly private targets are major components of the UK takeover market (approximately 90%), a fact that very few studies have taken into account.

Of course, one could argue that the dynamic acquisitiveness of frequent acquiring firms may be due to a number of reasons other than overconfidence (e.g. growth opportunities via a merger deal). Therefore, to reply to such claim, we proceed to a number of robustness checks showing that several components characterizing the concept of overconfidence appear to frequent acquirers enhancing our overconfidence hypothesis. More specifically, consistent to the literature, overconfident managers have proportionally higher debt capacity and strongly prefer cash or debt-financed mergers to stock deals, unless their firm appears to be overvalued by the market. In addition, the bulk of the empirical evidence suggests that overconfident managers initiate diversifying acquisitions, a fact that is also strongly approved by our results. A voluminous strand in this literature suggests that diversified firms trade at a discount,[6] supporting our theory that overconfident managers are particularly likely to undertake 'bad' acquisitions. In all the above cases, casual bidders significantly outperform frequent acquirers.

Finally, acquiring firms that make many acquisitions within a short-time interval are likely to be governed by less efficient managers than those of casual bidders. Our finding supports the hypothesis that frequent acquirers exhibit weaker corporate governance than casual bidders, providing one more plausible explanation for the return patterns obtained.

The remainder of this chapter is organized as follows: section 4.2 describes the data and the methodology. In section 4.3 we review the related literature and discuss our approach. Section 4.4 reports and interprets the empirical findings. Section 4.5 provides a summary and concludes our analysis.

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[6] Milgrom (1988) and Meyer, Milgrom and Roberts (1992) provide influence costs as drawbacks of diversification, while Scharfstein and Stein (2000) argue that increased layers of agency costs outweigh the potential benefits of a larger internal capital market (Stein (1997)).

4.2. Related Literature and Overconfidence Measure

4.2.1. Theoretical Foundations of Managerial Overconfidence

The main idea behind overconfidence is that certain managers display a great amount of overconfidence in their own abilities and precision of their knowledge. This assumption is motivated by psychological studies that find biased self-attribution (Wolosin, Sherman, and Till (1973); Langer and Roth (1975); Miller and Ross (1975); and Schneider, Hastorf, and Ellsworth (1979)). People overestimate the degree to which they are responsible for their own success by attributing it to their own abilities and crediting to bad luck a potential failure. This self-serving attribution of outcomes, in turn, reinforces individual overconfidence.[7] This is also closely related to the 'better than average effect', which suggests that individuals believe that their abilities are above average (Svenson, (1981) and Taylor and Brown (1988)) and 'narrow confidence intervals' which propose that people are miscalibrated in the way that their probability distributions or confidence intervals for uncertain events (i.e. the outcome of a merger) are too tight (Lichtenstein, Fischhoff and Phillps, (1982)).[8]

In addition, overconfidence increases through interaction with the self-enhancement effect. Individuals are likely to be overconfident about events that have a positive meaning and representation to them (Weinstein, (1980) and Weinstein and Klein (2002)). More

[7] Such behaviour is associated with the winner's curse hypothesis, which arises in a common value auction (the asset has the same value to all bidders), because the highest bidder has the highest positive valuation error and therefore wins the auction but does not like the 'prize' (Bazerman and Samuelson (1983)). However, it bids more than the actual gain, and its shareholders suffer a loss. Of course, rational individuals should not enter into contests in which they lose even when they "win". Managers know about the winner's curse and know that other acquirers have on average lost money, but have the hubris to believe that they are better than other managers in spotting attractive merger opportunities.

[8] Miscalibration is only one manifestation of overconfidence. The best-established finding in the calibration literature is that people tend to be overconfident in answering questions of moderate to extreme difficulty (i.e. merger initiation). See for example Lichtenstein et al. (1982) and Yates (1990).

specifically, individuals are infected by illusion of control (Weinstein (1980)). A CEO who conducts a merger apparently believes that she/he can control random tasks/events and is excessively optimistic about the future (Langer (1975); Langer and Roth (1975) and March and Shapira, (1987)). Kahneman and Riepe (1998, p. 54) summarize this motivation of overconfidence as follows: "The combination of overconfidence and optimism is a potent brew, which causes people to overestimate their knowledge, underestimate risks, and exaggerate their ability to control events". Secondly, Frank (1935) and Weinstein (1980) provide evidence that individuals are especially overconfident about projects which they are highly committed to. An overconfident CEO who initiates successful mergers can be thought of being highly committed since his compensation contract correlates personal wealth to the company's stock price and, hence, to the outcomes of corporate investment decisions.[9] According to Malmendier and Tate (2004), the effects of control and commitment attach to the CEO's internal investment decisions as well. In the M&A setting, this kind of overconfidence about the prospects of his own firm may cause the CEO to be reluctant to raise external capital to finance a takeover bid.[10] Finally, managers who exhibit a successful history within the M&A field may think that they are more experienced than others and that might reinforce their overconfidence tendency. The "learning objection" (irrational agents will learn from experience to be rational) is weaker in corporate finance (than the asset pricing literature), because important corporate financial decisions about capital structure and investment policy are more infrequent than

[9] Griffin and Brenner (2004) argue that all concepts characterizing overconfidence are linked. They present theoretical perspectives on (mis)calibration, among them the most influential perspective, optimistic overconfidence. According to the authors, the optimistic overconfidence perspective builds, for example, on the better than average effect, unrealistic optimism, and illusion of control.

[10] Managerial overconfidence leads managers to believe that an efficient capital market undervalues their firm's risky securities. Therefore it leads to a preference for internal funds that can be socially costly. Overconfident managers dependent on external finance sometimes decline positive NPV projects, believing that the cost of external finance is simply too high (Heaton (2002)).

trading decisions, with longer-delayed outcomes and noisier feedback. Learning from experience is less likely in such circumstances (Brehmer (1980)).[11]

In our M&A framework overconfidence is displayed in two forms. First, the manager may overestimate the value of the potential merger. This overvaluation stems from the manager's belief that his leadership skills are better than average or from the underestimation of the downside of the merger due to the illusion of control over its outcome (Malmendier and Tate (2004)). Second, the manager may overestimate the value of his current company (e.g. after a number of previous corporate investments) and engage into multiple acquisitions overestimating the capitalized value of his future leadership. Malmendier and Tate (2004) predict that an overconfident CEO is more likely to conduct value-destroying acquisitions if the perceived synergies are sufficiently large and if the perceived undervaluation and the portion of the deal financed by equity are sufficiently small. In addition, they argue that an overconfident CEO with abundant internal resources (i.e. large cash reserves and low leverage) is more likely to conduct an acquisition than a rational CEO and that the announcement performance in mean returns between rational and overconfident bidders should be positive.

4.2.2. Measure of Overconfidence on Acquisition Activity

The appeal of overconfidence as a general explanation of merger activity is contingent on its effect on average acquisitiveness. What is a more direct way to measure overconfidence in merger activity than the acquisitiveness itself (i.e. the number of acquisitions undertaken

[11] Russo and Schoemaker (1992) argue that managers make a mistake to equate experience with learning. Experience is inevitable; learning is not. Overconfidence persists in spite of experience because we often fail to learn from experience. In addition, Hayward (2002) posits that learning relates to the quality rather than quantity of a firm's experience.

by a unique bidder within a given period of time)?[12] As Heaton (2002, p. 35) argues: "overconfident managers want to undertake more projects". We identify overconfidence by employing the sophisticated research design suggested by Fuller et al. (2002), which defines the frequent bidder as the company that successfully acquired five or more bids over a three-year period. It has been argued in the literature that managers who initiate multiple bids in a short span of time tend to exhibit traits of overconfidence. Consequently, this sample is used to test this behavioural aspect of UK CEO/managers.[13] Viewing this issue from an opposite angle, overconfidence enhances the chances to succeed in contests (Goel and Thakor (2002) and Krahmer (2003)). Therefore, more successful acquisitions are likely to be undertaken by overconfident bidders who, in turn, by having more chances to win a contest are more likely to make many acquisitions and therefore to qualify in our frequent bidders' category. In addition, Fuller et al. (2002) argue that companies engaging in multiple, quick (many in a concentrated period) acquisitions seem to create relatively small amounts of synergies or to negotiate less efficiently.[14] Finally, overconfident-frequent acquirers believe that irrespective of overbidding for a target, the market will react favourably to their merger announcements due to the fact that it is already aware of their previous successful acquisitions decreasing the likelihood of failure, which on most occasions leads to share price reduction. In other words, the market will favour the 'certain solution' of an already tested -from previous successful bids- acquirer.

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[12] Surveying hundreds of overconfident CEOs would take too much time and could yield misleading conclusions. Overconfident managers might wish to appear more prudent and shade their answers accordingly. On the other hand, cautious ones might be feeling especially ebullient on the day of the survey.

[13] In the asset pricing literature, Glaser and Weber (2003) suggest that, by correlating measures of trading volume with miscalibration and better than average scores, they are able to empirically evaluate whether the "overconfidence" hypothesis explains high levels of trading volume.

[14] Acquisition fieldwork and laboratory experiments show that managers cannot carefully evaluate acquisitions that occur in quick succession (Haunschild, Davis-Blake and Fichman (1994)). Managers often experience an adrenaline rush or over-exuberance to acquire (Jemison and Sitkin (1986)) and hence, they ignore inferences from prior acquisitions, particularly if those inferences raise doubts about the merits of the focal acquisition.

Another recent major attempt to provide a proxy of overconfidence in M&As was launched by Malmendier and Tate (2004). The authors measured overconfidence by assessing how CEOs in a sample of Forbes 500 companies handled their stock options. Specifically, they examined 477 firms during the period from 1980 to 1994. If a CEO ever held options in his company until the last year before the expiration, he/she was classified as overconfident.[15] However, this way of measurement is not about purely capturing a CEO's overconfidence about merger profits or losses but mainly about a firm's performance in general. Therefore, it is not clear whether overconfidence about the CEO's own firm and about potential merger projects are distinguished, compared to our clear and direct proxy of measuring overconfidence in M&As.[16]

4.3. Data and Methodology

4.3.1. Data

We examine a sample of successful acquisitions by UK public companies that acquired both domestic and foreign targets, announced between January 1, 1980 and December 31, 2004. The sample acquisitions are drawn from the Securities Data Corporation's (SDC)

[15] Option holdings (Malmendier and Tate (2004), proxy) are strongly related to our measure of overconfidence. Overconfident CEOs holding options until the expiration year exhibit great amounts of acquisitiveness. For example, consider Wayne Huizenga, former boss of Dallas-based Blockbuster. He led the company during the 14 years that it appeared in the sample. He held some of his options until their expiration year, qualifying him as overconfident. He also made six acquisitions. Contrast him with J. Willard Marriott, chairman and CEO of the Bethesda, Md. –based Marriott International. He led his company for 15 years. Unlike Huizenga, he didn't hold options until expiration, and he didn't do any deals.

[16] Malmendier and Tate (2004) presented a second proxy. In particular, they compared they way CEOs were characterized in major newspapers and business publications, categorizing them as either overconfident or cautious. However, any judgement made by a newspaper or journal has a high probability of subjective judgement leading to unreliable conclusions. Press, named as journalists and analysts, is often biased due to personal intolerance, interests or passions and therefore inferences made by them should always be considered with a great caution.

Mergers and Acquisitions Database while the period selected is driven by the total availability of the database. The following criteria are used in selecting our final sample:

1. Acquirers are UK firms publicly traded on the London Stock Exchange (LSE) and have five days of return data around the takeover announcement on the DataStream Database.

2. Targets are private firms (including subsidiary firms).[17] The reason that the sample consists of private targets is twofold. First, we focus on private acquisitions because the bulk of merger activity in the UK consists of private acquisitions. Specifically, as Panel A of Table 1 shows, public transactions represent a very small fraction (9%) of the mergers and acquisitions activity in the UK, while private acquisitions stand for to the vast majority (91%) of the takeover activity in the UK. Moreover, public targets represent fewer industries in comparison to private targets, which represent 57 different industries, as Table 2 shows. Hence, the sample of private transactions covers a broad range of industries and is more representative of reality. Second, we concentrate on private targets because they are more difficult to value than public targets (i.e., there is relatively less public information to evaluate private firms) and therefore they provide a unique sample to test managers' overconfidence. Specifically, the valuation of private targets serves as the most appropriate testing ground of the overconfidence hypothesis since they are more likely to reflect managers' beliefs about potential synergies and future cash flows than public target firms. Public firms have a broader investor base and therefore more closely followed by security analysts than private firms.

[17] We examine subsidiary targets, as they are one of the three main categories of the market for corporate control. All subsidiary targets are unlisted companies after checking the Target Public Mid Code from the SDC database.

3. We require that the deal value corresponds to at least 1% of the market value of the assets of the acquirer (defined as the book value of assets minus the book value of equity plus the market value of equity).
4. The deal value is one million dollars or more.[18]
5. The frequent acquirer completes five or more bids in any three-year window during the sample period.
6. We omit financial and utility firms (following Fama and French (1992)) for both bidders and targets.
7. The bidder acquires at least 50% of the target's shares as a result of the takeover.

For the sample of multiple acquirers we also exclude clustered acquisitions where the bidder acquires two or more firms within five days in order to isolate the overlapping effect among the bids. After all this screening procedure we conclude to a sample of 3,844 and 1,490 acquisitions undertaken by casual and multiple acquirers respectively. Note also that since the market has no information about the bidder at the first bid it reacts to the merger announcement, as it is just a 'normal' bid of a casual bidder. Hence, we include first bids of frequent acquirers into multiple bidders' group. The two created portfolios are then divided into three subsets based on the method of payment for the acquisition, i.e. pure cash, pure stock, and combined.[19] The combined payment sub-sample includes all acquisitions in which the payment method is neither pure cash nor pure stock.

[18] We employ a one million dollars cut-off point to avoid results being generated by very small deals. Similarly, studies like Fuller, Netter and Stegemoller (2002) and Moeller, Schlingemann, and Stulz (2004) in the US use a cut-off point of one million dollars.
[19] Only 10 stock acquisitions include prefer stock and therefore do not contaminate our analysis.

4.3.2. Methodology

We calculate Cumulative Average Returns (CARs) for the five-day period [-2, +2][20] around the announcement date as supplied by SDC. More specifically, we estimate the abnormal returns by using a modified market-adjusted model:

$$AR_{it} = R_{it} - R_{mt} \quad (1)$$

where R_{it} is the return on firm i and R_{mt} is the value-weighed market index return (i.e. the FT-All Share) This approach amounts to assuming that $\alpha = 0$ and $\beta = 1$ for the firms in our sample.[21] The t-statistics are estimated using the cross-sectional variation of abnormal returns.

It is obvious that in our long-run analysis a subsequent acquisition will occur within less than 36 months after a preceding acquisition, since our sample consists also of multiple acquirers. We therefore use Calendar Time Portfolio Regressions (CTPR) to sidestep the problem of cross-sectional dependence of sample observations. In each calendar month, a portfolio is formed by including all stocks with an acquisition event during the past 12, 24, or 36 months. The portfolio is rebalanced every month by including new event firms that executed a transaction in the previous month and dropping the ones whose latest acquisition event falls out of the one to three-year holding period. The average monthly abnormal return during the one to three-year post-event period is the intercept from the time-series regression of the calendar portfolio return on the Fama and French (1993)

[20] We choose the five-day period because Fuller et al. (2002) find that a five-day window around the merger announcement given by SDC is wide enough to capture the first mention of a merger every time for a sample of about 500 announcements.

[21] We do not estimate market parameters based on a time period before each bid, since our sample contains acquirers making many acquisitions within a very small period of time and therefore, there is a high probability that previous takeover attempts would be included in the estimation period, hence making beta estimations less meaningful. Additionally, it has been shown that for short window event studies, weighting the market return by the firm's beta does not significantly improve estimation (Brown and Warner (1980)).

three-factor model. The FF 3-factor model are estimated by using the UK 3-factor of Dimson et al's (2003) to account for the UK B/M ratio peculiarities:

$$R_{pt} - R_{ft} = a_i + \beta_i (R_{mt} - R_{ft}) + s_i SMB_t + h_i HML_t + \varepsilon_{it}$$

where R_{pt} is the average monthly return of the calendar portfolio, R_{ft} is the monthly risk free return, R_{mt} is the monthly return of the value-weighted market index, SMB_t the value-weighted return on small firms minus the value-weghted returns on large firms, and HML_t the value-weighted return on high book-to-market firms minus the value-weighted return on low book-to-market firms. In addition, β_i, s_i and h_i are the regression parameters and ε_{it} is the error term. The α (intercept) is interpreted as the average of the individual, firm-specific intercepts.

4.4. Empirical Results

4.4.1. Casual/Multiple Bidder Abnormal Returns by Method of Payment

Our goal in this chapter is to measure the effect of a manager-specific characteristic (i.e. overconfidence) on his/her desire to conduct acquisitions and on the outcome (short-run stock performance) of such corporate decisions. In Table 4.3 we present five-day CARs for the full sample of rational (casual bidders) and overconfident (frequent bidders) acquirers respectively classified by method of payment. The empirical results suggest that exuberance about potential merger synergies dominates the countervailing effect of perceived undervaluation. More specifically, for all bids, the CAR is positive (1.18%) and

statistically significant at the 1% significance level.[22] This is in line with Chang (1998) and Ang and Kohers (2001) who document substantial gains for acquisitions of privately held firms. When we differentiate our results according to the overconfidence measure employed, we find that casual bidders significantly outperform (1.34%) multiple bidders (0.79%) by 0.55% at the 1% significance level. When we further investigate the returns on the basis of method of payment, casual bidders have significantly more positive abnormal returns than multiple bidders for cash payments and an on average better performance for stock and mixed forms of financing respectively. Consistent with Malmendier and Tate (2004), such a result provides an indication that overconfident managers mainly undertake cash offers.

4.4.2. Casual/Multiple Bidder Abnormal Returns by Domestic/Foreign Targets

We subsequently examine in Table 4.4 the performance of casual and multiple bidders engaging in domestic and foreign acquisitions. Since the UK is a leading player in international acquisitions, the study of UK acquisitions abroad appears as an important aspect in determining the overall success of FDI by acquisition.[23] In addition, in respect to the impact on returns of bidding firms that pursue such deals, the literature suggests differing performance to domestic acquisitions, although no clear conclusion can be drawn concerning the direction of the results.[24] Doukas and Travlos (1988) argue that acquisitions of non-domestic targets serve as a diversification 'vehicle', enabling the expansion of the boundary of the acquiring firm and therefore its better performance. This expansion

[22] Franks and Harris (1989) examine the effects of a large sample of over 1800 UK takeovers on shareholders' wealth and find that bidder shareholders gain or do not lose around the merger announcement date.
[23] Healy and Palepu (1993) note that, over the late 1980s, the UK was the lead acquiring nation in international acquisitions accounting for almost 30 per cent of international corporate investments over that period.
[24] See, for example, Doukas and Travlos (1988), Fatemi and Furtedo (1988), Kang (1993), Eun, Kolodny and Scheraga (1996) and Goergen and Renneboog (2004).

permits the internalization of synergies that would otherwise be lost because of various market failures.

Panel A reports the results for domestic (UK) acquisitions, which mirror the previous finding obtained in the full sample of Table 4.3. Firstly, we find that overall the announcement performance in mean returns between casual and multiple bidders is positive (0.59%) and, secondly, this pattern exists irrespective of the medium of exchange used in the transaction. Panel B, for cross-border (non-UK) acquisitions, virtually reports the same on average pattern as Panel A although the return difference obtained is not statistically significant. Overall, results reported in Panel A and B confirm to a major extent the return pattern documented in Table 4.3. This empirical evidence is considered critical since one could argue that our results are contaminated by the initial selection of the sample including both domestic and foreign targets. In a nutshell, the general pattern holds even after the target origin is taken into consideration.

4.4.3. Casual/Multiple Bidder Returns by Diversifying/Non-Diversifying Acquisitions

Multiple bidders are more likely than casual ones to undertake a merger project that, ex ante is unlikely to increase value (see prediction 2). Thus, the average effect of overconfidence on the probability of doing a merger might reflect the greater average propensity of overconfident managers to do bad mergers. A merger characteristic that, ex ante, is unlikely to favour casual bidders as soon as the merger opportunity presents itself is the diversification effect. Prior research has shown that diversifying mergers are the least likely to create value. In particular, there is a large body in the literature providing evidence that diversification may diminish shareholders' wealth (e.g. Morck, Shleifer and Vishny (1990), Ang and Stulz (1994); Berger and Ofek (1995) and Servaes (1996)). In

addition, in a recent paper, Doukas and Kan (2004) argue that bidders who acquire unrelated targets experience greater excess cash flow declines and valuation discounts than do bidders involved in related acquisitions. However, from our perspective, the CEO who is overconfident that his assessments of the merger's prospects are correct, presses on despite the ex ante negative signals from the market.

Table 4.5 reports the results we obtain for casual and multiple bidders acquiring firms that are diversified or non-diversified from the bidder's industry, which enable us to control for the possibility that mergers cluster within industries over time. A diversified bidder is defined as a firm whose three-digit SIC code is different from that of the target company.[25] Panel A presents, for diversifying acquisitions, a similar finding as the one obtained from the overall sample in Table 4.3. The CARs are substantially positive and significant for rational bidders (0.77%), who enjoy greater CARs than multiple bidders of 0.64% significant at the 1% level. The same picture is drawn from Panel B of non-diversifying acquisitions, where overconfident bidders exhibit on average worse performance than rational bidders. Therefore, as a whole, we conclude that our findings are robust to the effect of overconfidence after the cross-industry characteristic is taken into consideration.

A noticeable point to underline is that managers of frequent bidding firms engage proportionally into more diversifying than non-diversifying acquisitions. This characteristic can indicate to a great extent, as discussed above, large amounts of managerial overconfidence. In addition, when comparing the economic value of multiple

[25] Servaes (1996) points out that a straightforward examination of the four-digit SIC codes of the segments of the firm does not necessarily reveal the degree of diversification of the firm. He argues that the use of the four-digit SIC code would be too wide to identify the industrial structure of the firm. Similarly, Kahle and Walkling (1996) demonstrate how a four-digit SIC code firm assigned to a firm might be misleading with regard to the most reasonable two- or three-digit classifications.

bidders conducting diversifying and non-diversifying acquisitions (Panels A and B, Table 4.5) we confirm that diversifying acquisitions destroy wealth value relative to core-related acquisitions.

4.4.4. Casual/Multiple Bidder Abnormal Returns by Q Ratio

Another effect that may be related to increased merger activity is high growth future investment opportunities. In general, Rau and Vermaelen (1998) suggest that acquirers with a high market-to-book ratio (high Q ratio) outperform those with a low market-to-book ratio (low Q ratio) after a merger irrespective of the payment method used.[26] In some ways the market fails to understand that past managerial performance is not necessarily a good indicator of future performance, at least in the case of acquisitions. On the other hand, firms with a lower Tobin's Q ratio (high growth opportunities) are more likely to initiate mergers, suggesting that acquisitions may be a substitute for profitable investment opportunities.

However, when we divide our sample according to the Tobin's Q ratio[27] we come up to the same pattern obtained from our previous analysis (Table 4.6). In particular, rational bidders experience significantly greater gains (1.74%) than overconfident acquirers (0.77%) for the sample of low Q ratio bidders and on average better performance for the sample of the firms with low growth opportunities (Panels A and B respectively), regardless of the form of financing employed.[28] In addition, in contrast to an expected

[26] The main argument is the extrapolation hypothesis that explains the differential performance of overvalued and undervalued acquirers. Acquirers commanding a high market rating due to their recent performance and expected future performance (overvalued acquirers) may act out of overconfidence or hubris in making acquisitions. The stocks of such companies may also be overvalued and although the managers may be aware of such overvaluation, the stock market may be not.

[27] The average Q ratio is calculated one month prior to the announcement date and is the product of the market value divided by the net book value.

intensive acquisition strategy for high growth bidders, we find that overconfident bidders are proportionally less in number than those with low growth opportunities, which is exactly the opposite picture than the one drawn by the sample of casual acquirers. As a whole, our results confirm the return pattern of the worse performance of multiple (overconfident) bidders against casual (rational) bidders and eliminate the possibility of bullish merger activity due to future high investment opportunities.

4.4.5. Casual/Multiple Bidder Abnormal Returns by Relative Size

A very important component affecting bidder returns is the relative size of target to acquirer. Due to the fact that private targets are, on average, much smaller than public firms we expect the impact on the bidder of a private acquisition to be smaller than a public acquisition. In addition, we expect that larger firms are more likely to conduct a merger due to their empire incentives to grow more in value and size. Under this line of thinking, CEOs do not acquire companies to benefit their shareholders. On the contrary, they do it for themselves as a larger company means a bigger paycheck, a bigger fiefdom and more attention from the media. We use the relative size of target to bidder by defining it as the deal value of the transaction divided by bidder market value one month prior to the announcement date.

Table 4.7 displays the results for the relative size of target to bidder. In general, casual bidders enjoy larger profits than multiple bidders on average for both small and large relative size panels (Panels A and B respectively). We find that CARs are, in general,

[28] A plausible explanation is that low growth bidders might have exhausted their internal growth opportunities, especially in the case of multiple bidders. This is confirmed in Section 4.7, which shows that frequent bidders are involved in overinvestment strategies (generalize high amounts of capital expenditure) during a period of 12 months prior the event.

positively related to the relative size regardless of the medium of exchange. Accordingly, Asquith et al. (1983), Jensen and Ruback (1983) and Kang (1993) found greater abnormal returns for large targets in the 1970s. In addition, Fuller et al. (2002) identified a similar pattern to our evidence for a sample of US takeovers. This is linked to the suggestion made by Loderer and Martin (1990) who claimed that large firms seem to pay too much for their targets and large bids seem to be overpriced on average, facts that deteriorate share price performance. This constitutes, of course, one more manifestation of the support of the overconfidence view.

Finally, we observe that for the lower relative size acquisitions (i.e. where most large and, as expected, overconfident firms are included) a cash offer is the dominant method of payment. This evidence collaborates with Faccio and Masulis (2005) who suggest that cash financing is more preferable to larger acquirers due to its ease of use and their better access to debt markets, its ability to avoid significant costs of obtaining shareholder approval of pre-emptive rights exemptions and stock authorizations, and the higher regulatory costs of stock offers.

4.4.6. Casual/Multiple Bidder Abnormal Returns by Debt Capacity

Another key implication of our overconfidence story is that the overconfident bidder should have more internal resources. If a firm has a sufficient amount of cash on hand to finance a potential acquisition without issuing equity, then perceived undervaluation by the capital market will not discourage the CEO's enthusiasm to undertake the project. This is in line with the firm's debt capacity, which can allow the CEO to conduct a merger without issuing 'mispriced' security (Malmendier and Tate (2004)). A CEO who overestimates a potential merger's return may ex ante believe it will be profitable even in

the case that ex post it corresponds to default. Therefore, even if he/she views the debt as too expensive given his/her perception of the acquisition's value, he/she may accept it rather than foregoing the project altogether. In other words, debt allows the CEO, and the shareholders whose interests he/she values, to remain the residual claimant on all of the future's value. This effect is even clearer if the CEO can issue riskless debt to finance the deal.

Table 4.8 displays our results according to the bidders' debt capacity. Average debt capacity is calculated by adding the bidder's straight debt, short-term debt, and preferred equity and subtracting cash and marketable securities as of the date of the most recent financial information prior to the announcement of the transaction. Panels A and B show that casual bidders' share price performance significantly outperforms multiple bidders' performance overall (1.08%) and for low debt capacity levels (1.35%), and on average for firms with high debt capacity. In addition, as predicted, we observe from all panels (A, B and C) that multiple bidders have on average higher debt capacity than casual bidders. This is consistent with Hackbarth (2003) who finds that managerial overconfidence leads to greater debt financing and that overconfidence, by acting as a commitment device, can also ameliorate bondholder and shareholder conflicts such as debt overhang. Moreover, interestingly, a greater amount of multiple bidders is included in the portfolio with high debt capacity confirming our prediction that overconfident bidders have better access to debt markets. When managers have optimistic predictions of investment outcomes, they might be more inclined to finance with debt rather than equity. Overconfidence about the size of future outcomes would make managers unwilling to share future profits with new equity investors and make them more willing to issue debt rather than equity.

4.4.7. Casual/Multiple Bidder Abnormal Returns by Investment

Malmendier and Tate (2005) postulate that overconfident CEOs have a higher sensitivity of corporate investment to cash flow, on average, than their peers. The authors document the same finding in their M&A overconfidence paper (2004) confirming that CEOs who are classified as overconfident by their options measure, conduct mergers that have higher average sensitivities of investment to cash flow. While for rational CEOs the possibility of investing internally is irrelevant as any project undertaken has always-positive NPV, for overconfident CEOs the examination of the trade-off between investment and mergers should be seriously taken into consideration. Particularly, overconfident CEOs must allocate resources between investment projects in a way that maximizes returns while minimizing perceived financing costs. In general, we may expect that aggressive (overconfident) investment strategies should lead to overinvestment and lower future stock returns. Following Kaplan and Zingales (1997), capital expenditures are employed to serve as a measure of investment and represent purchases of property, plant and equipment for the 12 months ending on the date of the most current financial information prior to the announcement of the transaction.

Table 4.9, Panel A displays the investment results which, in-hand with our previous findings, indicate that rational bidders exhibit significantly greater positive abnormal returns than overconfident acquirers (0.92%) even after controlling for the means of payment. When we differentiate our results on the basis of diversifying/non-diversifying acquisitions, we obtain the same return pattern irrespective of the target industry or the method of payment used in the transaction. One other interesting observation is that multiple bidders' use of stock in mergers is very slim relative to casual bidders. This suggests that they rely heavily on the other two financing methods because i) they have

more internally generated cash flows (i.e. they are not financially constrained), and ii) their stock is likely to be perceived by their own managers as undervalued (i.e. not a strong currency to buy corporate assets). That is managers think that their stock has more value than what the market receives! This is another indication of managerial overconfidence.

In addition, in all panels we report higher average capital expenditure for overconfident bidders than rational CEOs. Therefore, we argue that the manager may overrate the value of his company and accomplish a number of several acquisitions. As discussed above, this stems from his overestimation of future returns from exclusive investment projects or general overestimation of the capitalized value of his future leadership. In sum, consistent to our expectations, we confirm overconfident CEOs' overinvestment, lower stock returns, and greater involvement into diversifying acquisitions, as also shown in Table 4.5.

4.4.8. Robustness Test

4.4.8.1. Multiple Bidders Abnormal Returns by First Vs Higher Order Bids

In order to further confirm that multiple bidders is a reliable proxy/measurement of overconfidence in M&As we examine the performance difference between first bids and fifth and more bids of frequent bidders. The use of a homogeneous sample of only multiple bidders offers the opportunity to control for (much of) the information about bidder characteristics contained in abnormal returns surrounding the merger announcement.[29] In this case first deals made by multiple bidders are considered as casual acquisitions, since the market reacts for the first time to the information of a merger undertaken by a specific unique acquirer. The latter sample of fifth and higher bids within the multiple acquirers'

[29] Hietala, Kaplan, and Robinson (2003) argue that acquisition announcement reveals not only the value of the acquisition itself but also the stand-alone value of the bidders, the potential synergies of the combination, and possibly the bidder overpayment.

sample serves as an appropriate testing ground to test extreme CEOs overconfidence about the positive outcome of an acquisition.

There are several possible explanations for the deteriorating performance of bidders completing many acquisitions in a short period of time. As already discussed, one possible reason is that such firms are unable to integrate subsequent acquisitions, due to the short interval among them, and hence each subsequent acquisition results in a worse performance than the previous one.[30] In addition, a review of the psychology literature on inference documents that the market systematically overweights salient, anecdotal and attention-grabbing information (i.e. merger initiation of casual bidders), and underweights highly relevant information (i.e. mergers undertaken by frequent acquirers). Alternatively, we could interpret these results for later bids for private firms, as a consequence of the less favourable price bidders receive when they multiply acquire firms in a concentrated period.[31] This is linked to our overconfidence story, providing a potential explanation for the announcement returns obtained.

In addition, the hubris hypothesis takes the view that the worsening performance is high owing to less care being taken with the next takeover due to overconfidence drawn from the success of the previous one. This could manifest in several ways that a less careful choice of targets leads to a higher price paid for those targets, or a higher leverage is taken on to pay for subsequent acquisitions. Under this hypothesis, it sounds plausible for a decline to be much more acute for acquirers whose initial acquisition is successful.

[30] The example of Mr Ebbers of World.Com who acquired numerous companies in a very short interval of time fits nicely with this view.

[31] Note, however, that Hayward (2002) posits that very long intervals increase the likelihood that inferences from prior experiences are 'unavailable, inaccessible and inapplicable'. The author suggests a U-shaped relationship between the acquisition performance and the intervals between acquisitions, which means that the performance is worse either when acquisitions occur in quick succession or in very long intervals.

Furthermore, the subsequent acquisitions may sometimes tend not only to create less synergy, but could also be of destructive value (Conn et al. (2004)). Table 4.10 displays the results we obtain for these 2 subsets of frequent bidders' sample. We find that on the first acquisition attempt acquirers realize a large positive and significant CAR of 1.72% while later deals lead to less value creation (0.49%). The mean economic difference between the two groups is substantial (1.23%) and statistically significant at the 5% level. The abnormal returns for acquisitions with deal order of 2nd, 3rd, and 4th or more deals suggest that the prior success leads to more acquisitions resulting systematically in lower abnormal returns. Acquisitions with a deal order of 2, 3, and 4 or more deals have abnormal returns of 0.79%, 0.69%, and 0.63%. Moreover, these abnormal returns are statistically significant and different from zero at the one percent level.

4.4.9. Casual/Multiple Bidder Abnormal Returns by Corporate Governance

Finally, a natural question for the worse mergers undertaken by frequent bidders could be raised with regards to the nature of their corporate governance. As discussed above, our overconfidence story implies that if CEOs believe that they can defy all odds and efficiently extract above normal returns from an acquisition, then those CEOs are likely to create less synergies or negotiate less efficiently. Clearly the role of the board of directors should serve as a check on this behaviour.[32] It would be expected that overconfident CEOs would have weak corporate governance in contrast to a more efficient board of directors of casual-rational bidders. Along these lines, Malmendier and Tate (2004) argue that effective corporate governance strongly mitigates CEO acquisitiveness.

[32] However, Hayward and Hambrick (1997) found that when the board has a significant number of insiders on it, and when the CEO is also the board's chairman, the relationship between CEO hubris and the size of premium paid is particularly striking.

In Table 4.11 we report our return patterns obtained after controlling for bidders' corporate governance.[33] The corporate governance literature suggests that an effective board should have no more than 12 members and, more specifically, it becomes more efficient when its size (i.e. the number of directors) lies between 4 and 12.[34] In general, we find that multiple bidders create on average less wealth value than casual bidders for both weak and strong corporate governance portfolios. Finally and most importantly, we document that multiple/overconfident bidders proportionally employ less efficient board size supporting our view of "indirect relationship between overconfidence and corporate governance and providing a further plausible interpretation for the multiple/aggressive bidding phenomenon".

4.4.10. Regression Analysis

The previous results analyze returns to acquirers using univariate comparisons. In this section, we perform multivariate tests on the determinants of acquirer's returns. In Table 4.12 we present the results of regressing the bidder's CARs on factors that may impact CARs. As with all regressions that explain returns to acquiring firms, because of the low explanatory power of the regression, the results must be viewed with scepticism, although the F-statistic for the equation is positive and significant. Since our results suggest that there are fundamental differences between multiple and casual bidders, we initially run regressions for these two groups separately (Panel A) and then we examine the results when these two groups are put together (Panel B).

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[33] Corporate governance data include only a fraction of our total sample (1990-2000), however, represent the main picture drawn according to the corporate governance literature.

[34] Of course this kind of corporate governance classification is quite weak and the results should me seen with caution.

In Panel A, we estimate bidder returns as a function of several bid characteristics, including whether the target is acquired with cash or stock. Other variables include the log of relative size of the target, the log of the target's size, the Q value, and dummy variables to indicate if the target and the bidder are in the same industry, if the bid is a fifth or higher bid (for multiple bidders' sample only), and if the bidder has high debt capacity. In Panel B we run a regression of CARs of all bids on all these factors including the dummy variable as to whether the bidder is a multiple acquirer.

Each of the explanatory variables has been suggested by theory as a determinant of the market's perception of an acquisition. The relative size of the target proxies for several effects. At a basic level, the larger the target relative to the bidder, the greater the effect of the acquisition on the bidder, and the more likely a greater market reaction. The Q variable is engaged to consider for growth opportunities. Dummy variables are included for cash or stock offers in order to control whether the method of payment affects the returns we obtain for our two groups. Dummy variable for the fifth and higher bid is employed to capture the results of the univariate tests that show fifth and higher bids may be infected by higher degrees of overconfidence and may indicate that managers negotiate less efficiently. The domestic dummy accounts for the potential that bids for UK targets are different than bids for foreign firms. In addition, we account for industry effects by including dummies based on SIC codes and debt capacity, as we showed above that multiple bidders have a higher debt capacity and this may result in more aggressive acquisitions. Finally, and most importantly, in Panel B we include a dummy variable of whether the bidder is a multiple acquirer. As we have found so far, frequent bidding indicates overconfidence and therefore 'bad' mergers are expected.

In general, the results are supportive to what we have found in the univariate analysis. CARs are positive and statistically significant for casual bidders while multiple bidders experience insignificant CARs. This result confirms the general pattern of the worse performance for multiple bidders. For casual bidders, the coefficients on common stock deals and relative size variables are positive and significant. This suggests that the CARs associated with stock deals are more positive than those associated with cash deals in acquisitions of casual bidders, and that the market views larger deals even more favourably. For multiple bidders, the coefficient on the dummy variable for the fifth and higher bid is negative and significant. This suggests that as the number of bids increases, the acquirer will have lower CARs. Further, the target size dummy is positive and significant while all the other variables are insignificant. In Panel B, which includes all the bidders, very interestingly, the dummy variable for multiple bidders is negative and significant. Our prediction is therefore confirmed since our measure of overconfidence has a significant negative effect on CARs. Particularly, the market discounts overconfident bids by approximately 90 basis points over the five-day window. Moreover, consistent to the above results, the market views favourably common stock deals, while negative CARs are experienced for cash acquisitions. In addition, the coefficient on the Q variable is marginally positive and significant. All other variables appear to be statistically insignificant.

4.4.11. Long-Run Analysis

Up to this point we have analyzed the performance of casual versus multiple bidders for the five-day window. In order to obtain a better understanding of the market reaction to overconfident and rational bidders we examine their long-run performance (one, two and three years respectively). It is expected that the market receives multiple bidders more unfavourably. This is due to the fact that, as discussed above, multiple bidders are engaged in aggressive investment strategies, which create an overvalued combined firm leading to a natural long-run underperformance.

Table 4.13 displays the abnormal returns for one, two and three-year calendar time portfolios formed on the basis of casual against multiple bidders. In general, we find negative and significant results for both portfolios, however, frequent/overconfident bidders perform worse on average confirming our prediction. Our results are, in most of the cases, robust when we differentiate on the method of payment used in the transaction. Subsequently, in Table 4.14 we split our sample into domestic and foreign acquisitions in order to isolate the effect of foreign acquisitions and the potential contamination they cause to the returns obtained. Panel A reports the results for acquisitions of UK firms. Overall, the return pattern confirms the above results reflecting more negative, on average, abnormal returns for multiple versus casual bidders. The same picture is drawn when we estimate Jensen's alphas for foreign acquisitions (Panel B, Table 4.14). Casual bidders outperform multiple bidders on average. Finally, when we further differentiate on the basis of the form of financing we obtain in general a similar return pattern.

4.5. Summary and Conclusions

In this chapter we adopt a behavioural approach using psychological insights in explaining the root of one of the most significant and disruptive decisions undertaken by corporate organizations (i.e. M&As) and their effects on shareholders' wealth value. Particularly, we establish and empirically approve the effect of overconfidence on managerial tendency to conduct merger deals. In addition, we provide evidence that acquisitions undertaken by overconfident managers have lower abnormal returns that those of casual bidders.

We measure overconfidence by using a sample of frequent acquirers, defined as companies that pursued five or more acquisitions over a three-year time interval, and show that overconfident managers are keen, firstly, on initiating a large number of acquisitions (direct evidence) and secondly, on getting involved in mergers that the market discounts them compared to projects undertaken by "rational" CEOs. We empirically confirm the significantly better performance of casual versus multiple bidders after controlling for method of payment, target origin, target industry, relative size and bidder growth opportunities. Overconfident bidders are those with higher debt capacity, who have greater preference for cash offers and have presented excessive investment activity over a recent period before the announcement of an acquisition.

In conclusion, the overconfidence theory proves to be a complementary theoretical framework to explain the causes of merger activity. In addition, "our proxy provides a significant future challenge to the managerial overconfidence theory of corporate finance enhancing the suggestion that studying such behavioural explanations is a fruitful avenue for future research. In general, our results have "direct implications on managerial corporate decisions' setting". First of all, firms should avoid high debt levels. Secondly,

the role of the board of directors is considered crucial. Corporations might want to make sure that they have the most independent directors as possible on their board, people that will need to play a more active role in the way they evaluate and select a merger project. We suggest that these individuals should be able and willing to take a view contrary to the CEO's bullishness on a proposed merger whenever this acts in the interests of their shareholders.

Table 4.1. Sample Statistics: Acquirer Market Equity and Transaction Value by Form of Payment and Target Ownership Status and Firm Data

The table presents in Panel A the mean and median market value of acquirers and the mean and median transaction value of the acquisition. The last three columns represent the total deal value and the percentage of total value of transaction and number of acquisitions respectively. The summary statistics are provided on the basis of a sample of 5848 acquisitions from 1980 to 2004. Acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Targets are domestic and foreign public and private firms. Privately held acquisitions (used in the analysis) are splitted into acquisitions of casual and multiple bidders. Multiple acquirers are defined as bidders acquiring five or more targets within a 3-year period. All others are casual bidders that also include the first bid of multiple bidders. The summary statistics are further divided by method of payment. Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. Panel B reports the mean and median (in million pounds) of the firm-specific data as provided by SDC. Assets include current assets, long-term investments and funds, net fixed assets, tangible assets, and deferred charges for the acquiring company. Capital includes property, plant and equipment. Investment represents capital expenditures for property, plant and equipment. Debt capacity includes bidder's straight debt, short-term debt, and preferred equity subtracting cash and marketable securities. Cash flow represents earnings before interest, taxes and depreciation. Q is the product of the Market Value divided by the net book value.

Panel A: Acquirer Market Equity and Transaction Value by Form of Payment and Target Ownership Status

Type of Acquisition	Number of Acquisitions	Mean Market Equity (£mln)	Median Market Equity (£mln)	Mean Transaction Value (£mln)	Median Transaction Value (£mln)	Total Deal Value (£mln)	% of Total Deal Value	% of Total Number of Acquisitions
All	5848	486.998	89.76	57.848	6.815	338,236.09	100	100
Private	5334	415.134	83.72	31.628	5.855	168,671.74	49.87	91.21
Public	514	1232.762	232.66	329.892	44.735	169,564.35	50.13	8.79
Casual	3844	413.619	65.70	31.333	5.500	120,443.34	71.41	72.07
Multiple	1490	419.042	143.85	32.390	6.965	48,228.40	28.59	27.93
Cash	2984	448.965	101.97	33.383	5.905	99,580.61	59.04	55.94
Stock	189	161.995	34.22	28.261	4.770	5,341.35	3.17	3.54
Combo	2161	390.558	67.98	29.500	5.950	63,749.78	37.79	40.52
Casual Cash	2130	433.035	88.19	32.073	5.495	68,315.99	56.72	55.41
Casual Stock	153	166.009	29.90	30.056	4.000	4,598.52	3.82	3.98
Casual Combo	1561	411.395	50.41	30.448	5.600	47,528.83	39.46	40.61
Multiple Cash	854	488.696	154.63	36.653	7.010	31,264.62	64.83	57.31
Multiple Stock	36	144.937	51.69	20.634	6.300	742.83	1.54	2.42
Multiple Combo	600	336.347	134.99	27.035	6.965	16,220.95	33.63	40.27

Table 4.1- *Continued*

Panel B: Firm Data

Variables	Casual Bidders (CB)			Multiple Bidders (MB)		
	Number of Mergers	Mean	Median	Number of Mergers	Mean	Median
Assets	1928	599.033	70.99	806	590.516	158.87
Capital	1640	232.637	18.84	652	283.649	33.26
Investment (CAPEX)	1572	37.017	3.82	628	41.031	7.69
Debt Capacity	1585	78.590	2.95	637	137.356	12.54
Cash Flow	1645	66.050	9.72	652	63.433	14.96
Q	3407	3.789	1.95	1384	6.747	2.13

Table 4.2. Financing Characteristics and Merger Activity by Industry

The table reports in Panel A financing characteristics by year for acquisitions of private firms from 1980 to 2004 undertaken by casual and multiple bidders. All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Multiple acquirers are defined as bidders acquiring five or more targets within a 3-year period. All others are casual bidders that also include the first bid of multiple bidders. Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. Panel B displays by industry, the fraction of sample firms that were acquired and firms that were acquiring private targets from 1980 to 2004. Industry data are organized using the acquiror and target MID description provided by the SDC database. First through fifth columns report the number and percentage of acquirers (casual and multiple) and targets respectively, in a particular industry.

Panel A: Financing Characteristics

Year	Number of firms with Disclosed Method of Payment		Casual Bidders (CB)						Multiple Bidders (MB)					
			Cash		Stock		Combo		Cash		Stock		Combo	
	CB	MB	N	%	N	%	N	%	N	%	N	%	N	%
1980	1	-	1	100	-	-	-	-	-	-	-	-	-	-
1981	3	-	-	-	-	-	3	100	-	-	-	-	-	-
1982	4	-	-	-	-	-	4	100	-	-	-	-	-	-
1983	4	-	-	-	-	-	4	100	-	-	-	-	-	-
1984	10	-	5	50	2	20	3	30	-	-	-	-	-	-
1985	19	-	14	74	5	26	-	-	-	-	-	-	-	-
1986	53	6	44	83	3	6	6	11	4	67	2	33	-	-
1987	145	29	109	75	17	12	19	13	22	76	2	7	5	17
1988	266	109	187	70	7	3	72	27	69	63	2	2	38	35
1989	217	102	129	59	8	4	80	37	66	65	5	5	31	30
1990	161	80	104	65	8	5	49	30	54	68	1	1	25	31
1991	103	61	72	70	3	3	28	27	36	59	3	5	22	36
1992	138	44	80	58	7	5	51	37	26	59	3	7	15	34
1993	145	48	72	50	8	6	65	44	26	54	1	2	21	44
1994	221	39	120	54	9	4	92	42	29	74	-	-	10	26
1995	202	49	100	49	6	3	96	48	27	55	3	6	19	39
1996	218	76	112	51	4	2	102	47	44	58	2	3	30	39
1997	283	140	149	53	7	2	127	45	73	52	3	2	64	46
1998	332	150	194	58	5	2	133	40	100	67	1	1	49	32
1999	287	143	150	52	8	3	129	45	81	57	-	-	62	43
2000	282	157	120	43	17	6	145	51	73	47	2	1	82	52
2001	222	92	83	37	7	3	132	60	38	41	2	2	52	57
2002	173	67	99	57	9	5	65	38	35	52	2	3	30	45
2003	152	56	87	57	5	3	60	40	33	59	1	2	22	39
2004	203	42	99	49	8	4	96	47	18	43	1	2	23	55
Total	3844	1490	2130	55	153	4	1561	41	854	57	36	3	600	40

Table 4.2- *Continued*

Panel B: Merger Activity by Industry

Industry	CB		Targets		MB		Targets	
	N	%	N	%	N	%	N	%
Aerospace and Defense	46	1.19	36	0.94	16	1.07	13	0.87
Advertising andManagement	66	1.71	46	1.20	99	6.64	55	3.70
Agriculture and Livestock	22	0.56	25	0.65	0	0	5	0.34
Apparel and Retailing	24	0.61	31	0.81	5	0.34	2	0.13
Automobiles and Components	114	2.96	102	2.65	42	2.82	43	2.89
Automotive Retailing	61	1.58	77	2.00	34	2.28	40	2.68
Broadcasting	37	0.95	31	0.81	11	0.74	6	0.40
Building/Construction & Engineering	278	7.23	255	6.63	58	3.89	79	5.30
Cable	5	0.12	2	0.05	-	-	1	0.07
Casinos and Gaming	10	0.25	3	0.08	8	0.54	3	0.20
Chemicals	111	2.88	115	2.99	89	5.97	59	3.96
Computers and Electronics Retailing	10	0.25	13	0.33			1	0.07
Computers and Peripherals	55	1.42	66	1.72	6	0.40	12	0.81
Construction Materials	125	3.24	88	2.29	20	1.34	26	1.74
Containers and Packaging	63	1.63	61	1.59	48	3.22	31	2.08
Discount and Department Store Retailing	21	0.54	12	0.31	-	-	1	0.07
E-commerce/B2B	-	-	2	0.05	-	-	4	0.27
Educational Services	13	0.33	17	0.44	8	0.54	10	0.67
Electronics	78	2.02	94	2.45	29	1.95	40	2.68
Employment Services	34	0.87	41	1.07	27	1.81	27	1.81
Food and Beverage	205	5.32	154	4.01	70	4.70	65	4.36
Food and Beverage Retailing	114	2.96	145	3.77	39	2.62	42	2.82
Home Improvement Retailing	11	0.28	24	0.62	15	1.01	16	1.07
Home Furnishing	49	1.26	63	1.64	14	0.94	10	0.67
Hotels and Lodging	51	1.32	65	1.69	27	1.81	44	2.95
Household and Personal Products	21	0.54	24	0.62	19	1.28	10	0.67
Industrials	146	3.79	151	3.93	46	3.09	48	3.22
Internet and Catalog Retailing	10	0.25	8	0.21	-	-	-	-
Internet Software and Services	34	0.87	32	0.83	8	0.54	9	0.60
IT Consulting and Services	115	2.98	100	2.60	57	3.83	38	2.55
Legal Services	-	-	1	0.03	-	-	-	-
Machinery	189	4.91	176	4.58	47	3.14	68	4.56
Metals and Mining	131	3.40	141	3.67	76	5.10	29	1.95
Motion Pictures/Audio Visual	42	1.08	43	1.12	8	0.54	10	0.67
Non Residential	21	0.54	152	3.95	16	1.07	94	6.31
Other Consumer Products	126	3.27	151	3.93	43	2.89	66	4.43
Other Materials	23	0.59	43	1.12	13	0.87	27	1.81
Other Media and Entertainment	-	-	6	0.16	-	-	-	-
Other Real Estate	183	4.75	66	1.72	105	7.05	6	0.40
Other Retailing	35	0.90	42	1.09	9	0.60	16	1.07
Other Telecommunications	1	0.03	5	0.13	-	-	1	0.07
Paper and Forest Products	30	0.77	48	1.25	7	0.47	8	0.54
Professional Services	218	5.66	239	6.22	87	5.84	126	8.46
Publishing	166	4.31	171	4.45	75	5.03	65	4.36
Real Estate Management and Development	30	0.77	21	0.55	-	-	3	0.20
Recreation and Leisure	52	1.34	59	1.53	41	2.75	46	3.09
REITs	33	0.85	14	0.36	29	1.95	5	0.34
Residential	2	0.51	4	0.10	-	-	1	0.07
Semiconductor	15	0.38	21	0.54	6	0.40	12	0.81
Software	182	4.72	210	5.46	42	2.82	68	4.56
Space and Satellites	3	0.08	1	0.03	7	0.47	-	-
Telecommunications Equipment	70	1.81	55	1.43	15	1.01	25	1.68
Textiles and Apparel	186	4.83	144	3.75	7	0.47	22	1.48
Tobacco	9	0.23	7	0.18	-	-	-	-
Transportation and Infrastructure	126	3.27	109	2.84	30	2.01	34	2.28
Travel Services	28	0.73	19	0.49	32	2.15	17	1.14
Wireless	14	0.36	13	0.34	-	-	1	0.07

Table 4.3. Cumulative Abnormal Returns (CARs) of Casual Vs Multiple Acquirers

The table presents the Cumulative Abnormal Returns (CARs) of casual and multiple bidders acquiring private firms over a period between 1980 and 2004. Cumulative abnormal returns are calculated for the five days [-2, +2] around the announcement day (day 0) of a takeover. Abnormal Returns are estimated using a modified market-adjusted model:

$$AR_{it} = R_{it} - R_{mt}$$

where R_{it} is the Return on firm i and R_{mt} is the Value Weighed Market Index Return (FT-All Share). All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Multiple acquirers are defined as bidders acquiring five or more targets within a 3-year period. All others are casual bidders that also include the first bid of multiple bidders. Results in Panel A are comprised of bids of casual and multiple acquirers for private targets. The results are further divided by the method of payment. Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. The number of bids is reported below the mean. The last row represents the differences in mean short-run CARs. P-values are provided in parenthesis. [a] Denotes significance at the 1% level; [b] Denotes significance at the 5% level; [c] Denotes significance at the 10% level.

	All	Cash	Stock	Combo
		Panel A: All Bids		
All Bidders	1.18%[a]	0.82%[a]	3.47%[a]	1.49%[a]
	5334	2984	189	2161
Casual Bidders	1.34%[a]	0.95%[a]	3.83%[a]	1.62%[a]
	3844	2130	153	1561
Multiple Bidders	0.79%[a]	0.49%[a]	1.92%	1.15%[a]
	1490	854	36	600
Mean Differences in CARs [-2, +2] of Casual minus Multiple Bidders	0.55% (0.005)	0.46% (0.033)	1.91% (0.277)	0.46% (0.175)

Table 4.4. Cumulative Abnormal Returns (CARs) of Casual Vs Multiple Acquirers by the Target Origin (Domestic Vs Foreign)

The table presents the Cumulative Abnormal Returns (CARs) of casual and multiple bidders acquiring domestic or foreign private companies over a period between 1980 and 2004. Cumulative abnormal returns are calculated for the five days [-2, +2] around the announcement day (day 0) of a takeover. Abnormal Returns are estimated using a modified market-adjusted model:

$$AR_{it} = R_{it} - R_{mt}$$

where R_{it} is the Return on firm i and R_{mt} is the Value Weighed Market Index Return (FT-All Share). All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Multiple acquirers are defined as bidders acquiring five or more targets within a 3-year period. All others are casual bidders that also include the first bid of multiple bidders. Panel A represents the results of domestic acquisitions (UK firms) and Panel B the results of foreign acquisitions (non-UK firms) respectively. The results are further divided by the method of payment. Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. The number of bids is reported below the mean. The last rows of each panel (A and B) represent the differences in mean short-run CARs. P-values are provided in parenthesis. [a] Denotes significance at the 1% level; [b] Denotes significance at the 5% level; [c] Denotes significance at the 10% level.

	All	Cash	Stock	Combo
Panel A: Domestic Targets				
Casual Bidders	1.33%[a]	1.07%[a]	2.26%[c]	1.54%[a]
	2711	1442	126	1143
Multiple Bidders	0.74%[a]	0.47%[b]	0.10%	1.13%[a]
	948	519	26	403
Mean Differences in CARs [-2, +2] of Casual minus Multiple Bidders	0.59% (0.013)	0.60% (0.022)	2.16% (0.126)	0.41% (0.329)
Panel B: Foreign Targets				
Casual Bidders	1.36%[a]	0.70%[a]	11.2%[a]	1.82%[a]
	1133	688	27	418
Multiple Bidders	0.88%[a]	0.52%[c]	6.65%	1.19%[a]
	542	335	10	197
Mean Differences in CARs [-2, +2] of Casual minus Multiple Bidders	0.48% (0.163)	0.18% (0.640)	0.45% (0.403)	0.63% (0.306)

Table 4.5. Cumulative Abnormal Returns (CARs) of Casual Vs Multiple Acquirers by Diversifying/Non-Diversifying Acquisitions

The table presents the Cumulative Abnormal Returns (CARs) of casual and multiple bidders making diversifying acquisitions of private firms, represented in Panel A, or non-diversifying acquisitions, represented in Panel B over a period between 1980 and 2004. A diversified bidder is defined as a firm whose three-digit SIC code is different from that of the target company. CARs are calculated for the five days [-2, +2] around the announcement (day 0) of a takeover. Abnormal Returns are estimated using a modified market-adjusted model:

$$AR_{it} = R_{it} - R_{mt}$$

where R_{it} is the Return on firm i and R_{mt} is the Value Weighed Market Index Return (FT-All Share). All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Multiple acquirers are defined as bidders acquiring five or more targets within a 3-year period. All others are casual bidders that also include the first bid of multiple bidders. The results are further divided by the method of payment. Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. The number of bids is reported below the mean. The last rows of each panel (A and B) represent the differences in mean short-run CARs. P-values are provided in parenthesis. [a] Denotes significance at the 1% level; [b] Denotes significance at the 5% level; [c] Denotes significance at the 10% level.

	All	Cash	Stock	Combo
Panel A: Diversifying Acquisitions				
Casual Bidders	1.37%[a]	0.89%[a]	4.16%[b]	1.77%[a]
	2434	1385	97	952
Multiple Bidders	0.73%[a]	0.34%	1.59%	1.27%[a]
	959	562	23	374
Mean Differences in CARs [-2, +2] of Casual minus Multiple Bidders	0.64% (0.006)	0.55% (0.037)	2.57% (0.245)	0.50% (0.199)
Panel B: Non-Diversifying Acquisitions				
Casual Bidders	1.28%[a]	1.06%[a]	3.27%[c]	1.38%[a]
	1410	745	56	609
Multiple Bidders	0.89%[a]	0.76%[b]	2.52%	0.97%[c]
	531	292	13	226
Mean Differences in CARs [-2, +2] of Casual minus Multiple Bidders	0.39% (0.269)	0.30% (0.444)	0.75% (0.803)	0.41% (0.518)

Table 4.6. Cumulative Abnormal Returns (CARs) of Casual Vs Multiple Acquirers by their Q Ratio

The table presents the Cumulative Abnormal Returns (CARs) of casual and multiple bidders acquiring private firms over a period between 1980 and 2004. Cumulative abnormal returns are calculated for the five days [-2, +2] around the announcement day (day 0) of a takeover. Abnormal Returns are estimated using a modified market-adjusted model:

$$AR_{it} = R_{it} - R_{mt}$$

where R_{it} is the Return on firm i and R_{mt} is the Value Weighed Market Index Return (FT-All Share). All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Multiple acquirers are defined as bidders acquiring five or more targets within a 3-year period. All others are casual bidders that also include the first bid of multiple bidders. We rank acquirers according to their Q ratio and divide them to low and high-Q acquirers respectively. The low-Q acquirers are defined as those with low Q ratio (bottom average), while the high-Q acquirers are defined as those with high Q ratio (top average). The acquirer Q ratio is calculated one month before the acquisition announcement date and is the product of the Market Value divided by the net book value. Panel A reports the results for low-Q acquirers. Panel B represents the results for the high-Q acquirers. The results are further divided by the method of payment. Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination payment comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. The number of bids is reported below the mean. The last rows of each panel (A and B) represent the differences in mean short-run CARs. P-values are provided in parenthesis. [a] Denotes significance at the 1% level; [b] Denotes significance at the 5% level; [c] Denotes significance at the 10% level.

	All	Cash	Stock	Combo
Panel A: Low Q				
Casual Bidders	1.74%[a]	1.21%[a]	7.14%[b]	2.12%[a]
	1757	1025	53	679
Multiple Bidders	0.77%[a]	0.42%[c]	3.54%	1.21%[a]
	638	392	13	233
Mean Differences in CARs [-2, +2] of Casual minus Multiple Bidders	0.97% (0.001)	0.79% (0.013)	3.60% (0.414)	0.91% (0.093)
Panel B: High Q				
Casual Bidders	1.17%[a]	0.83%[a]	3.45%[b]	1.35%[a]
	1650	831	65	754
Multiple Bidders	0.87%[a]	0.63%[b]	2.05%[b]	1.09%[a]
	746	386	14	346
Mean Differences in CARs [-2, +2] of Casual minus Multiple Bidders	0.30% (0.294)	0.20% (0.555)	1.40% (0.436)	0.26% (0.583)

Table 4.7. Cumulative Abnormal Returns (CARs) of Casual Vs Multiple Acquirers by the Relative Size of the Target

The table presents the Cumulative Abnormal Returns (CARs) of casual and multiple bidders acquiring private firms over a period between 1980 and 2004. Cumulative abnormal returns are calculated for the five days [-2, +2] around the announcement day (day 0) of a takeover. Abnormal Returns are estimated using a modified market-adjusted model:

$$AR_{it} = R_{it} - R_{mt}$$

where R_{it} is the Return on firm i and R_{mt} is the Value Weighed Market Index Return (FT-All Share). All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Multiple acquirers are defined as bidders acquiring five or more targets within a 3-year period. All others are casual bidders that also include the first bid of multiple bidders. The relative size of the target is defined as the deal value divided by bidder market value. The Acquirer Market Value (MV) is calculated as of the month before the announcement date and is the product of the monthly share price multiplied by the number of ordinary shares in issue on Datastream. We rank acquirers according to their relative size and divide them to those with small and large relative size respectively. Panel A represents bids with small relative size of the target to bidder (bottom average) and Panel B bids with large relative size of the target to bidder (top average) respectively. The results are further divided by the method of payment. Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. The number of bids is reported below the mean. The last rows of each panel (A and B) represent the differences in mean short-run CARs. P-values are provided in parenthesis. [a] Denotes significance at the 1% level; [b] Denotes significance at the 5% level; [c] Denotes significance at the 10% level

	All	Cash	Stock	Combo
Panel A: Small Relative Size				
Casual Bidders	0.65%[a]	0.83%[a]	0.03%	0.36%
	1734	1117	49	568
Multiple Bidders	0.37%[b]	0.29%	0.49%	0.49%
	930	580	15	335
Mean Differences in CARs [-2, +2] of Casual minus Multiple Bidders	0.28% (0.198)	0.54% (0.034)	-0.46% (0.739)	-0.13% (0.782)
Panel B: Large Relative Size				
Casual Bidders	1.91%[a]	1.09%[a]	5.70%[a]	2.34%[a]
	2104	1011	103	990
Multiple Bidders	1.49%[a]	0.89%[a]	2.95%	2.00%[a]
	560	274	21	265
Mean Differences in CARs [-2, +2] of Casual minus Multiple Bidders	0.42% (0.218)	0.20% (0.618)	2.75% (0.306)	0.34% (0.511)

Table 4.8. Cumulative Abnormal Returns (CARs) of Casual Vs Multiple Acquirers by their Debt Capacity

The table presents the Cumulative Abnormal Returns (CARs) of casual and multiple bidders acquiring private firms over a period between 1980 and 2004. Cumulative abnormal returns are calculated for the five days [-2, +2] around the announcement day (day 0) of a takeover. Abnormal Returns are estimated using a modified market-adjusted model:

$$AR_{it} = R_{it} - R_{mt}$$

where R_{it} is the Return on firm i and R_{mt} is the Value Weighed Market Index Return (FT-All Share). All bidders are publicly traded firms listed on the London Stock Exchange (LSE). Multiple acquirers are defined as bidders acquiring five or more targets within a 3-year period. All others are casual bidders that also include the first bid of multiple bidders. The average debt capacity (in million pounds) is reported in brackets and is calculated by adding bidder's straight debt, short-term debt, and preferred equity and subtracting cash and marketable securities as of the date of the most recent financial information prior to the announcement of the transaction. Data of debt capacity are obtained from SDC. We rank the data available from SDC according to the average debt capacity and form the portfolios. Panel A reports the results for all bids. Panel B represents the results of the acquirers that belong to the bottom average debt capacity levels and Panel C displays the results for the acquirers that lie on the top levels of debt capacity respectively. The results are further divided by the method of payment. Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination payment comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. The number of bids is reported below the mean. The third rows of each panel (A, B and C) represent the differences in mean short-run CARs. P-values are provided in parenthesis. [a] Denotes significance at the 1% level; [b] Denotes significance at the 5% level; [c] Denotes significance at the 10% level.

	All	Cash	Stock	Combo
Panel A: All Bids				
Casual Bidders	2.20%[a]	1.56%[a]	8.36%[a]	2.38%[a]
CB Debt Capacity	1585 [78.59]	786 [107.88]	61 [6.52]	738 [53.37]
Multiple Bidders	1.12%[a]	0.81%[a]	0.71%	1.49%[a]
MB Debt Capacity	637 [137.36]	336 [229.30]	9 [-19.69]	292 [36.40]
Mean Differences in CARs [-2, +2] of Casual minus Multiple Bidders	1.08% (0.002)	0.75% (0.052)	7.65% (0.010)	0.89% (0.135)
Panel B: Low Debt Capacity				
Casual Bidders	2.74%[a]	2.15%[a]	8.92%[a]	2.52%[a]
CB Debt Capacity	851 [-32.07]	330 [-48.56]	48 [-9.57]	473 [-22.86]
Multiple Bidders	1.39%[a]	0.98%	0.79%	1.67%[b]
MB Debt Capacity	260 [-24.98]	99 [-33.49]	7 [-57.34]	154 [-18.04]
Mean Differences in CARs [-2, +2] of Casual minus Multiple Bidders	1.35% (0.026)	1.17% (0.116)	8.13% (0.030)	0.85% (0.327)

Table 4.8- *Continued*

	All	Cash	Stock	Combo
	Panel C: High Debt Capacity			
Casual Bidders	1.58%[a]	1.12%[a]	6.31%[b]	2.13%[a]
CB Debt Capacity	734 [206.90]	456 [221.08]	13 [65.96]	265 [189.42]
Multiple Bidders	0.94%[a]	0.73%[b]	0.43%	1.29%[b]
MB Debt Capacity	377 [249.31]	237 [339.07]	2 [112.09]	138 [97.16]
Mean Differences in CARs [-2, +2] of Casual minus Multiple Bidders	0.64% (0.118)	0.39% (0.383)	5.88% (0.058)	0.84% (0.304)

Table 4.9. Cumulative Abnormal Returns (CARs) of Casual Vs Multiple Acquirers by their Industry-Adjusted Capital Expenditure (CAPEX)

The table presents the Cumulative Abnormal Returns (CARs) of casual and multiple bidders acquiring private firms over a period between 1980 and 2004. Cumulative abnormal returns are calculated for the five days [-2, +2] around the announcement day (day 0) of a takeover. Abnormal Returns are estimated using a modified market-adjusted model:

$$AR_{it} = R_{it} - R_{mt}$$

where R_{it} is the Return on firm i and R_{mt} is the Value Weighed Market Index Return (FT-All Share). All bidders are publicly traded firms listed on the London Stock Exchange (LSE). Multiple acquirers are defined as bidders acquiring five or more targets within a 3-year period. All others are casual bidders that also include the first bid of multiple bidders. The average capital expenditure (in million pounds) is reported in brackets and represents purchases of property, plant and equipment for the 12 months ending on the date of the most current financial information prior to the announcement of the transaction. Data of capital expenditure are obtained from SDC. We divide them by industry using the 3-digit SIC code. Panel A reports the results for all bids. Panel B represents the results of the acquirers that have different SIC codes from that of their targets (diversifying acquisitions) and Panel C displays the results of the acquirers with the same 3-digit SIC code with their targets (non-diversifying acquisitions) respectively. The results are further divided by the method of payment. Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination payment comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. The number of bids is reported below the mean. The third rows of each panel (A, B and C) represent the differences in mean short-run CARs. P-values are provided in parenthesis. [a] Denotes significance at the 1% level; [b] Denotes significance at the 5% level; [c] Denotes significance at the 10% level.

	All	Cash	Stock	Combo
Panel A: All Bids				
Casual Bidders	1.99%[a]	1.50%[a]	4.62%[a]	2.30%[a]
CB Capital Expenditure	1572 [37.02]	780 [46.83]	56 [3.88]	736 [29.14]
Multiple Bidders	1.07%[a]	0.83%[a]	-0.67%	1.37%[a]
MB Capital Expenditure	628 [41.03]	333 [62.49]	5 [13.11]	290 [16.87]
Mean Differences in CARs [-2, +2] of Casual minus Multiple Bidders	0.92% (0.007)	0.67% (0.083)	5.29% (0.011)	0.93% (0.110)
Panel B: Diversifying Acquisitions				
Casual Bidders	1.90%[a]	1.53%[a]	3.67%[b]	2.21%[a]
CB Capital Expenditure	940 [40.78]	487 [52.16]	28 [5.52]	425 [30.05]
Multiple Bidders	1.00%[a]	0.66%[c]	0.06%	1.41%[a]
MB Capital Expenditure	373 [52.75]	200 [77.68]	2 [1.40]	171 [24.20]
Mean Differences in CARs [-2, +2] of Casual minus Multiple Bidders	0.90% (0.023)	0.87% (0.069)	3.61% (0.068)	0.80% (0.224)

Table 4.9- *Continued*

	All	Cash	Stock	Combo
Panel C: Non-Diversifying Acquisitions				
Casual Bidders	2.11%[a]	1.47%[a]	5.57%[c]	2.41%[a]
CB Capital Expenditure	632 [31.43]	293 [37.96]	28 [2.23]	311 [27.90]
Multiple Bidders	1.17%[b]	1.09%[b]	-1.15%	1.31%
MB Capital Expenditure	255 [23.89]	133 [39.66]	3 [20.92]	119 [6.34]
Mean Differences in CARs [-2, +2] of Casual minus Multiple Bidders	0.94% (0.123)	0.38% (0.573)	6.72% (0.068)	1.10% (0.295)

Table 4.10. Cumulative Abnormal Returns (CARs) of Multiple Acquirers (1st Deals Vs Later Deals)

The table presents the Cumulative Abnormal Returns (CARs) of multiple acquirers acquiring five or more private firms over the 1985 and 2004 period. Cumulative abnormal returns are calculated for the five days [-2, +2] around the announcement day (day 0) of a takeover. Abnormal Returns are estimated using a modified market-adjusted model:

$$AR_{it} = R_{it} - R_{mt}$$

where R_{it} is the Return on firm i and R_{mt} is the Value Weighed Market Index Return (FT-All Share). All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). The usual estimation period is eliminated due to the high probability of confounding events for acquirers acquiring five or more targets during a three-year period. Panel A represents the results of the first successful private acquisition of multiple acquirers within a 3-year period and then gradually the results of the 2nd, 3rd, 4th and 5th or more deals of multiple acquirers respectively. The results are further divided by the method of payment. Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. The number of deals is reported below the mean. The last row represents the differences in mean short-run CARs. P-values are provided in parenthesis. [a] Denotes significance at the 1% level; [b] Denotes significance at the 5% level; [c] Denotes significance at the 10% level.

	All	Cash	Stock	Combo
Panel A: Multiple Acquirers (MA)				
Multiple Acquirers: 1st Deals	1.72%[a]	0.71%	2.84%	3.06%[a]
	223	126	10	87
Multiple Acquirers: 2nd or More Deals	0.79%[a]	0.49%[a]	1.92%	1.15%[a]
	1490	854	36	600
Mean Differences in CARs [-2, +2] of Multiple Acquirers-1st Deals minus Multiple Acquirers-2nd or More Deals	0.93% (0.048)	0.22% (0.663)	0.92% (0.812)	1.91% (0.026)
Multiple Acquirers: 3rd or More Deals	0.69%[a]	0.39%[b]	2.46%	1.00%[a]
	1259	722	30	507
Mean Differences in CARs [-2, +2] of Multiple Acquirers-1st Deals minus Multiple Acquirers-3rd or More Deals	1.03% (0.030)	0.32% (0.536)	0.38% (0.923)	2.06% (0.018)
Multiple Acquirers: 4th or More Deals	0.63%[a]	0.35%[c]	2.69%	0.89%[a]
	1028	589	25	414
Mean Differences in CARs [-2, +2] of Multiple Acquirers-1st Deals minus Multiple Acquirers-4th or More Deals	1.09% (0.024)	0.36% (0.493)	0.15% (0.971)	2.17% (0.014)
Multiple Acquirers: 5th or More Deals	0.49%[b]	0.31%	3.22%	0.57%
	777	439	19	319
Mean Differences in CARs [-2, +2] of Multiple Acquirers-1st Deals minus Multiple Acquirers-5th or More Deals	1.23% (0.013)	0.40% (0.459)	-0.38% (0.928)	2.49% (0.006)

Table 4.11. Cumulative Abnormal Returns (CARs) of Casual Vs Multiple Acquirers by their Corporate Governance

The table presents the Cumulative Abnormal Returns (CARs) of casual and multiple bidders acquiring private firms over a period between 1990 and 2000 (fraction of our sample). Cumulative abnormal returns are calculated for the five days [-2, +2] around the announcement day (day 0) of a takeover. Abnormal Returns are estimated using a modified market-adjusted model:

$$AR_{it} = R_{it} - R_{mt}$$

where R_{it} is the Return on firm i and R_{mt} is the Value Weighed Market Index Return (FT-All Share). All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Multiple acquirers are defined as bidders acquiring five or more targets within a 3-year period. All others are casual bidders that also include the first bid of multiple bidders. Strong corporate governance is defined as the governance of the companies whose number of directors (executives and non-executives) is between 4 and 12. The rest companies are defined as firms with weak corporate governance. Panel A represents bids of firms with weak corporate governance and Panel B bids of firms with strong corporate governance respectively. The results are further divided by the method of payment. Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. The number of bids is reported below the mean. The last rows of each panel (A and B) represent the differences in mean short-run CARs. P-values are provided in parenthesis. [a] Denotes significance at the 1% level; [b] Denotes significance at the 5% level; [c] Denotes significance at the 10% level

	All	Cash	Stock	Combo
Panel A: Weak Corporate Governance				
Casual Bidders	1.09%[a]	1.33%[a]	2.27%	0.64%
	415	238	14	163
Multiple Bidders	0.47%	0.21%	0.02%	0.94%
	190	118	2	70
Mean Differences in CARs [-2, +2] of Casual minus Multiple Bidders	0.62% (0.299)	1.12% (0.121)	2.25% (0.407)	-0.30% (0.778)
Panel B: Strong Corporate Governance				
Casual Bidders	1.85%[a]	1.51%[a]	3.29%[c]	2.07%[a]
	994	472	39	483
Multiple Bidders	1.36%[a]	0.65%[c]	1.28%	2.06%[a]
	389	190	6	193
Mean Differences in CARs [-2, +2] of Casual minus Multiple Bidders	0.49% (0.265)	0.86% (0.062)	2.01% (0.366)	0.01% (0.993)

Table 4.12. Ordinary Least Squares Regression Analyses of Cumulative Abnormal Returns of Casual Vs Multiple Acquirers

The table presents ordinary least squares regression of the bidder's five-day cumulative abnormal return on the following variables. All acquirers are publicly traded firms listed on the London Stock Exchange (LSE). Multiple acquirers are defined as bidders acquiring five or more targets within a 3-year period. All others are casual bidders that also include the first bid of multiple bidders. In Panel A, the first two dummy variables are defined as whether the target is acquired with cash and whether the target is acquired with stock. Cash offers include cash only and mixtures of cash and debt and stock offers include common stock. The remainder of the dummy variables are defined as whether the target is domestic (UK company), whether the bidder and target are in different industry, whether the bidder has high debt capacity, and whether the bid is the fifth or higher bid (for multiple bidders only). Panel B contains the same variables to panel A plus a dummy variable defined as whether the bidder is frequent acquirer. The Q variable, the log of the relative size of the target and the log of the target's size are also included in the regression. The Q ratio is calculated one month before the acquisition announcement date and is the product of the Market Value divided by the net book value. The relative size of the target is the natural log of target deal value, as reported by SDC, divided by acquirer market value as of the month before the announcement date. P-values are reported in brackets.

Panel A Dependent variables	**Casual Bidders (CB)**	**Multiple Bidders (MB)**
Intercept	0.023	0.010
	[0.000]	[0.257]
Dummy = 1 If Target is Acquired with Cash and Debt	-0.006	-0.006
	[0.183]	[0.281]
Dummy = 1 If Target is Acquired with Common Stock	0.049	-0.013
	[0.000]	[0.592]
Dummy = 1 If Target is Domestic	-0.005	0.005
	[0.331]	[0.383]
Dummy = 1 If Target and Bidder are in Different Industry	0.004	-0.002
	[0.386]	[0.765]
Dummy = 1 If Bidder has High Debt Capacity	-0.005	-0.002
	[0.319]	[0.713]
Dummy = 1 If Fifth or Higher Bid	-	-0.014
	[-]	[0.017]
Q	0.000	0.000
	[0.117]	[0.205]
Log of Relative Size	0.051	0.049
	[0.000]	[0.551]
Log of Target Size	-0.000	0.004
	[0.979]	[0.052]
F-Statistic	7.428	1.54
	[0.000]	[0.130]
N	1585	637
R^2	3.6%	2.2%

Table 4.13- *Continued*

Panel B Dependent variables	All Bidders (CB+MB)
Intercept	0.020
	[0.000]
Dummy = 1 If Bidder is Multiple Acquirer	-0.009
	[0.018]
Dummy = 1 If Target is Acquired with Cash and Debt	-0.008
	[0.032]
Dummy = 1 If Target is Acquired with Common Stock	0.050
	[0.000]
Dummy = 1 If Target is Domestic	-0.001
	[0.827]
Dummy = 1 If Target and Bidder are in Different Industry	0.002
	[0.616]
Dummy = 1 If Bidder has High Debt Capacity	0.000
	[0.663]
Q	0.000
	[0.072]
Log of Relative Size	0.002
	[0.521]
Log of Target Size	0.000
	[0.483]
F-Statistic	5.279
	[0.000]
N	2271
R^2	2.1%

Table 4.13. Calendar-Time Portfolio Regression of Long-Run Stock Returns using Fama-French 3-Factor Model

This table presents the OLS estimates of abnormal returns to merger portfolios of casual and multiple acquirers according to the Fama and French 3-factor model. The sample of the overall portfolio for casual (multiple) bidders consists of 3378 (1336), 3206 (1269) and 2986 (1180) successful takeover bids that took place over the period 1980-2002 (for 1, 2 and 3-year analysis respectively) as identified from the *Securities Data Corporation's* (SDC) *Global Financing* database. Multiple acquirers are defined as bidders acquiring five or more targets within a 3-year period. All others are casual bidders that also include the first bid of multiple bidders. Calendar time regressions are further performed on the basis of the method of payment used in the transaction (Cash, Stock, Combination of Cash and Stock). Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. Acquirers enter the portfolio on the announcement day of the successful takeover and remain for 12, 24 and 36 months respectively. Portfolios are rebalanced each month to include firms that have just completed a takeover. We estimate the calendar-time return under the Fama-French 3-factor model with the following regression:

$$R_{pt} - R_{ft} = a_i + \beta_i (R_{mt} - R_{ft}) + s_i SMB_t + h_i HML_t + \varepsilon_{it}$$

The numbers in percentage represent the reported FF α, which is the average of the individual, firm- specific intercepts. The t-statistics are calculated on the basis of Andrews' (1991) heteroscedasticity and autocorrelation consistent standard errors. The number of firms is reported below the monthly average abnormal returns.

	Casual Bidders (CB)		
	1 year	**2 years**	**3 years**
All	-0.71%[a] 3378	-0.88%[a] 3206	-0.93%[a] 2986
Cash	-0.62%[a] 1885	-0.72%[a] 1786	-0.64%[a] 1703
Stock	-1.46%[a] 134	-2.01%[a] 125	-2.18%[a] 118
Combo	-0.75%[a] 1359	-1.07%[a] 1295	-1.20%[a] 1165
	Multiple Bidders (MB)		
	1 year	**2 years**	**3 years**
All	-0.87%[a] 1336	-1.28%[a] 1269	-1.42%[a] 1180
Cash	-0.60%[a] 760	-1.00%[a] 725	-1.15%[a] 689
Stock	-1.87% 32	-1.61%[b] 30	-1.67%[a] 28
Combo	-0.86%[a] 544	-1.38%[a] 514	-1.62%[a] 463

Table 4.14. Calendar-Time Portfolio Regression of Long-Run Stock Returns by the Target Origin using Fama-French 3-Factor Model

This table presents the OLS estimates of abnormal returns to merger portfolios of casual and multiple acquirers according to the Fama and French 3-factor model. The sample consists of successful takeover bids that took place over the period 1980-2002 (for 1, 2 and 3-year analysis respectively) as identified from the *Securities Data Corporation's* (SDC) *Global Financing* database. Multiple acquirers are defined as bidders acquiring five or more targets within a 3-year period. All others are casual bidders that also include the first bid of multiple bidders. Calendar time regressions are performed on the basis of the target origin (domestic/foreign) and further the method of payment used in the transaction (Cash, Stock, Combination of Cash and Stock). Cash financing includes transactions made solely in cash, or cash and debt. Stock offers are defined as transactions made solely in common stock. Combination financing comprises offers consisting of both cash and stock and/or convertibles, and methods classified as "other" by SDC. Acquirers enter the portfolio on the announcement day of the successful takeover and remain for 12, 24 and 36 months respectively. Portfolios are rebalanced each month to include firms that have just completed a takeover. We estimate the calendar-time return under the Fama-French 3-factor model with the following regression:

$$R_{pt} - R_{ft} = a_i + \beta_i (R_{mt} - R_{ft}) + s_t SMB_t + h_t HML_t + \varepsilon_{it}$$

The numbers in percentage represent the reported FF α, which is the average of the individual, firm-specific intercepts. The t-statistics are calculated on the basis of Andrews' (1991) heteroscedasticity and autocorrelation consistent standard errors. The number of firms is reported below the monthly average abnormal returns.

Panel A: Domestic Bids	**Casual Bidders (CB)**		
	1 year	**2 years**	**3 years**
All	-0.96%[a]	-1.16%[a]	-1.23%[a]
	2404	2284	2139
Cash	-0.81%[a]	-0.93%[a]	-0.97%[a]
	1284	1216	1166
Stock	-1.24%[b]	-2.04%[a]	-2.21%[a]
	112	105	100
Combo	-1.09%[a]	-1.51%[a]	-1.64%[a]
	1008	963	873
	Multiple Bidders (MB)		
	1 year	**2 years**	**3 years**
All	-0.95%[a]	-1.38%[a]	-1.41%[a]
	849	803	748
Cash	-0.66%[b]	-1.05%[a]	-1.05%[a]
	462	439	423
Stock	-2.87%[c]	-1.65%[c]	-1.50%[b]
	26	25	23
Combo	-0.65%[c]	-1.22%[a]	-1.45%[a]
	361	339	302

Table 4.15- *Continued*

Panel B: Foreign Bids	Casual Bidders (CB)		
	1 year	**2 years**	**3 years**
All	-0.60%[a] 974	-0.76%[a] 922	-0.82%[a] 847
Cash	-0.66%[a] 601	-0.74%[a] 570	-0.72%[a] 537
Stock	-1.77% 22	-3.20%[a] 20	-2.30%[b] 18
Combo	-0.86%[a] 351	-0.94%[a] 332	-1.03%[a] 292
	Multiple Bidders (MB)		
	1 year	**2 years**	**3 years**
All	-0.70%[b] 487	-1.01%[a] 466	-1.37%[a] 432
Cash	-0.41% 298	-0.76%[a] 286	-1.12%[a] 266
Stock	-0.10% 6	-1.03% 5	-1.62% 5
Combo	-1.05%[b] 183	-1.25%[a] 175	-1.70%[a] 161

Chapter 5: Conclusions, Implications and Proposals for Future Investigation

5.1. Conclusions

This thesis addresses several gaps that exist on the factors driving acquiring firms' stock performance. It explicitly examines the inter-relation of standard performance determinants identified in the literature and the effects of important characteristics of the merger market such as frequent acquisitions, merger valuations and managerial overconfidence. Such task is distinctively important since the latter characteristics are believed to play a foremost role in shaping wealth effects of acquiring firms. Indeed our findings confirm their importance and thus create new avenues for future investigation.

Firstly, this thesis documents empirical evidence on shareholders' wealth effects of UK public firms involved in acquisitions of targets with different ownership status and using alternative methods of payment. This study is the first empirical work that examines the performance of multiple bidders for the UK, which constitute a large proportion of the total UK merger market, offering an insight into their unique behaviour. Secondly, this thesis is the first UK study that provides empirical evidence on whether market valuations influence acquirer's returns. Further, this thesis examines the performance of the specific category of frequent bidders and compares it to the performance of casual bidding firms. Such an examination offers the opportunity to provide a behavioural explanation of bidders' returns. More specifically we suggest that overconfidence drives high managerial acquisitiveness which serves as a new measurement of this behavioural concept. Finally, we report empirical evidence on unlisted acquisitions, which are major components of the global merger activity; however, very few studies have been launched on this issue.

We initially (chapter 2) used a sample of UK frequent acquirers (i.e. acquirers that made many domestic and foreign acquisitions within a very short period of time) to control for (much of) the information contained surrounding the acquisition announcement. We found that bidders acquiring private firms or subsidiaries realized significantly positive returns for the five-day period around the event announcement, while acquisitions of public firms generated significant losses for the acquiring firm's shareholders, irrespective of the method of payment used in the transaction (cash or stock). For private targets and subsidiaries, bidders gained when they used cash and mixed form of financing, while they exhibited insignificant returns for stock acquisitions. We subsequently examined bidder returns on the basis of the relative size of the target to the bidder. We found that the larger the target to the bidder, the larger the abnormal returns obtained. All these patterns are similar to the US study of Fuller, Netter and Stegemoller (2002) who employed a similar research design (i.e. the use of multiple bidders' sample) to ours.

Further, we proceeded to a number of several robustness checks to identify whether these results stand after controlling for various characteristics. We controlled for target origin (domestic/foreign targets), as it could be the case that the inclusion of foreign targets contaminates our results. However, we obtained similar return patterns to the ones displayed in our main analysis. We then examined whether diversifying/non-diversifying acquisitions alter our results. We reported that, irrespective of the target belonging to the same industry with the bidder or not, our results mirror our main findings. Finally, we examined whether our patterns hold when we control for bidders' book-to-market ratio. Such an analysis was also used in order to further confirm the robustness of our initial hypothesis (i.e. the research design we follow allows us to control for much of the information about bidder characteristics contained in the returns at the acquisition

announcement). On the whole, the results enhanced our assumption that announcement market returns are not affected by bidders' characteristics and also that the general patterns stand when we control for book-to-market ratio.

Nevertheless, the picture we drew when we proceeded to a long-run examination of bidder returns was completely opposite. In particular, we obtained negative abnormal returns irrespective of the target ownership status or the method of payment used in the transaction. Such a finding indicates that the market probably overreacts to acquisitions of private firms and/or subsidiaries and therefore no fruitful conclusion can be generalized with regards to the type of target acquired and the profits enjoyed by bidders' shareholders. We then (chapter 3) explored some potential factors for the return patterns obtained. More specifically, we investigated whether market conditions (stock market valuations and/or merger activity) drive the performance of bidding firms. According to the literature there is a link between high market valuations and intensive merger activity. Therefore, we raised the question whether stock prices or merger waves determine to an extent bidder returns.

We used a sample of UK domestic acquisitions and classify the market into high-, neutral- or low-valuation periods based on the P/E ratio of the TOTMKUK index and for robustness reasons on the TOTMKUK index itself. In addition, we examined the share price performance of acquiring firms according to the level of merger activity they experienced. We classified each month as a hot or cold merger month respectively, after ranking each month according to the number of mergers, and identifying whether this month lies in the top or bottom 30% quartile with the largest or smallest number of mergers respectively.

We found that stock market valuations are indeed a significant deterministic factor of the bidder performance experienced. Overall, we found quantitatively similar patterns to the ones obtain in chapter 2. However, when we examined bidder performance on the basis of market valuations, we obtained positive and significant abnormal returns in high-valuation periods, while insignificantly positive CARs are generated during low-valuations periods. We further checked whether the employment of a different proxy (TOTMKUK index itself) for market classification and/or different event window (-20, +20) alter our return patterns. We reported, however, that our results are robust when different market valuation proxy and/or event window are applied. Such a finding indicates that the market is likely to reward acquisitions undertaken during an upward market, while it appears indifferent to acquisitions initiated when stock prices are low. In addition, when merger activity was taken into account, cold markets (i.e. markets with a small number of successful acquisitions) were found to lead to larger on average positive abnormal returns than hot markets, suggesting that acquirers are more cautious. Finally, we explored the interrelationships between different states of stock market valuation and merger activity and we identified larger positive abnormal returns during high valuation periods irrespective of the number of mergers undertaken. Consequently, we argued that stock prices drive performance of bidding firms, although there is a link with merger activity.

We further investigated long-run performance of acquisitions carried out during different valuation periods. In general, the returns we obtained were significantly negative; however, we found that low-valuation bidders generate on average less loss than high-valuation bidders even when method of payment and target ownership status are taken into consideration. Such a result indicates that the market initially rewards the initiatives of high-valuation acquirers to conduct mergers during periods that all the stock prices are in

general above their fundamental values, but realizes its fault though time and corrects it. In contrast, for low-valuation acquisitions the market is cautious initially but it learns over time and believes that such mergers are likely to have better potential. In addition, we provided evidence, by examining six-month pre-event performance of bidding firms, that our results are not just a manifestation of long-run reversals. Finally, we suggested that herding behaviour of managers is likely to be a potential explanation for the worse long-run performance of high-valuation bidders versus low-valuation acquirers.

Lastly (chapter 4), we investigated whether managerial psychological biases (namely overconfidence) are responsible for the difference in magnitude of results we obtain between casual bidders and multiple bidders. The main idea behind the intuition of overconfidence is that managers believe that their abilities are better compared to other managers and overestimate the synergies they can obtain through a merger. We define overconfident managers as those that make many acquisitions (i.e. frequent acquirers) within a short time interval (i.e. five or more bids within a three-year period).

We suggested that overconfident bidders conduct a large number of acquisitions in a small period of time while overconfidence traits lead to lower abnormal returns. Moreover, we provided evidence that overconfident CEOs exhibit worse performance than rational bidders after controlling for several effects (i.e. method of payment, target origin, core industry, M/B value, relative size). Further, we preceded to several robustness checks to provide evidence that various components that, according to the literature, characterize overconfidence, at the same time characterize the behaviour of frequent bidders. This is because, one could argue, the dynamic acquisitiveness of frequent acquirers could be related to a number of reasons other than overconfidence. We showed that overconfident

managers exhibit a proportionally higher debt capacity and strongly prefer cash or debt-financed mergers to stock deals. In addition, we reported that overconfident managers favour to conduct diversifying acquisitions.

Moreover, we presented that frequent acquirers are likely to be engaged in overinvestment procedures prior to an acquisition initiation, leading them to lower abnormal returns. Finally, firms making many acquisitions are likely to be governed by a less efficient board of directors. Therefore, we suggested that corporations should make sure that they have independent directors on the board, so that these directors will have the willingness to take a view that contrasts with the CEO when this serves the interests of the firm's shareholders.

5.2. Suggestions for Future Research

In chapter 2 we found that acquisitions of private firms and subsidiaries increase the wealth gains of bidding firms' shareholders; however, in the long run such acquisitions lead to negative abnormal returns. This finding is really interesting and raises a number of questions: Why when we examine several short periods individually we obtain positive abnormal returns, but when we add up these small periods and create a total period of one, two or three years for investigation we obtain negative abnormal returns? The importance of this question increases when we take into consideration the fact that private firms and subsidiaries are often sold at a discount and therefore overpricing should not be the case for such underperformance. How can we solve this puzzle? Is it just a result we obtained due to methodological problems or does some other answer, more convincing, lie behind this puzzle? We believe that it would be interesting to explore the above questions and provide some plausible explanations.

In chapter 4 we suggested that overconfidence is a potential factor that determines the corporate decisions of some managers and this overconfidence 'pushes' them to undertake a large number of merger projects. Of course overconfidence is not the only behavioural aspect that may influence managerial decisions. Consequently: Are there any other behavioural or psychological biases that lie behind merger initiations? For example, are managers infected by representativeness? Are managers willing to change their opinion in the face of new information? In other words, are they infected by conservatism? Do they appear to engage in "narrow framing"? Does the managerial decision of conducting a merger entail ambiguity aversion? All these concepts are borrowed from the behavioural finance literature and are likely to offer some interesting interpretations to managerial motivation to initiate merger projects.

In chapter 3 we examined the performance of bidding firms on the basis of market valuations while in chapter 4 we studied, as discussed above, the link between managerial overconfidence and corporate acquisitions. Some other interesting questions arise: Is a high market valuation correlated with a high degree of managerial overconfidence? Do we expect that booming periods are related to conductions of large number of acquisitions, product of managerial overconfidence? And how does this affect bidders' performance? The answers to these questions appear to promise very useful conclusions.

Finally, in chapters 2 and 4 we reported lower abnormal returns of a unique multiple bidder in later deals (third and higher or fifth and higher) compared to first deals. This result may be related to the recently well-known concept of divergence of opinion among investors. In particular, in the first deals investors have differences in opinion with regards to the synergies of a potential merger and this increases the returns generated by the

bidder. However, as this specific bidder proceeds to a number of many acquisition attempts, investors are aware of the results of a merger from previous deals by the same bidder and therefore small discrepancies in opinion occur. This results in lower returns. We suggest that this phenomenon of a potential link between divergence of opinion and lower abnormal returns in later deals demands a thorough further investigation.

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